

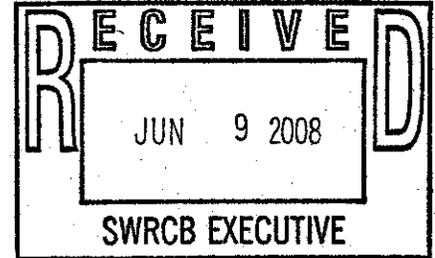


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Public Comment
Draft Construction Permit
Deadline: 6/11/08 by 12 p.m.

JUN 09 2008

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814



Dear Ms. Townsend:

We have reviewed the proposed general NPDES permit and fact sheet for stormwater discharges from construction sites in California, per your public notice of March 2008. Our comments are enclosed.

Overall, we believe the proposed general permit is a significant improvement over the 1999 permit. In particular, we are pleased to see the inclusion of numerous quantitative permit requirements (such as NALs and NELs) since these conditions will help clarify the permit and improve enforceability. We also strongly support the risk-based approach proposed for the new permit.

We also have a number of concerns about the proposed permit which are elaborated upon in the enclosure. As an example, we believe the NOI process and the date of permit coverage for a given project need further clarification.

Lastly, we provide an assessment in our comments of the implications of EPA's upcoming effluent limitations guidelines for the construction and development industry since there will likely be many questions about this as the permit issuance process moves forward.

Thank you for the opportunity to review and comment on the proposed general permit. Should you have any questions, please call me at (415) 972-3420, or Eugene Bromley of the NPDES Permits Office at (415) 972-3510.

Sincerely,

Douglas E. Eberhardt, Chief
NPDES Permits Office

Enclosures

Enclosure – EPA, Region 9 Comments on Proposed General NPDES Permit and Fact Sheet for Stormwater Discharges from Construction Activities in California

I. Strong Features of Proposed Permit:

There are several new features of the proposed permit that we believe are particularly noteworthy and for which we would like to express our strong support.

A. Risk-Based Permit

We believe that the risk-based approach adopted in the proposed permit will focus attention on particular projects that pose the greatest risk to the receiving waters, thereby enhancing the protection provided by the permit, while also reducing the overall burden imposed on the industry. For additional perspective, we would also suggest that the State Board try to estimate the fraction of projects which would fall into the various risk categories.

B. Numeric Action Levels (NALs) and Numeric Effluent Limitations (NELs)

As the State Board is aware, the enforceability of stormwater permits has been a challenge over the years since most permits are based on best management practices (BMPs) rather than numeric effluent limitations. In recent years, Region 9 has been encouraging more quantitative effluent limits in stormwater permits to improve both the clarity and enforceability of permit requirements. We believe that the proposed NALs and NELs in the proposed permit are an important step in the right direction which will enhance the enforceability of the permit and improve the protection of receiving waters provided by the permit.

C. Rain Event Action Plan (REAP)

The proposed REAP requirements are another feature of the proposed permit which we strongly support, which should ensure better preparation at construction sites for upcoming rain events.

D. Training for SWPPP Preparation

The permit's requirements for training and other qualifications for personnel preparing stormwater pollution prevention plans (SWPPPs) should ensure that higher quality and more effective SWPPPs are prepared which will again enhance the protection provided by the permit.

E. Hydromodification

Here again we are pleased to see quantitative permit requirements for addressing the potential hydromodification impacts of new developments and re-developments.

II. Other Comments on the Proposed Permit

A. Implications of EPA's Upcoming Construction and Development Guidelines

As the State Board is aware, EPA's Office of Science and Technology is currently in the process of developing effluent limitations guidelines (ELGs) for the construction and development industry. EPA's tentative schedule for proposing and finalizing the ELGs calls for proposal in June 2008 and finalizing the ELGs in December 2008. As you know, NPDES regulations (40 CFR 122.44(a)(1)) require that after finalization of ELGs, NPDES permits must be consistent with the ELGs. As such, if the State's new general permit were to be delayed until after finalization of the ELGs, the State's proposal may have to be modified to be consistent with the ELGs.

There may also be concerns and questions if the State's permit differs from the proposed ELGs anticipated for June 2008. The State's permit would not necessarily have to be fully consistent with the proposed ELGs. For many years now, in the absence of promulgated ELGs, stormwater permits (industrial, construction and municipal) have been based on the basic requirements of the Clean Water Act (CWA) and the best professional judgment of the permit writer. Especially for BMP-based permits, it is only natural that the requirements will vary somewhat from state to state depending on the permit writer, and the priorities within a given state. In fact, we see variations of this nature in the requirements of existing state permits. However, we would suggest that the State Board consider the EPA proposal when it is published for additional ideas for permit conditions that may be appropriate for the State permit. The EPA proposal will also be accompanied by several additional background documents (including an economic analysis) which may provide useful information to the State for its final permit. In addition, during the public comment period the State Board will have the opportunity to submit comments on the EPA proposal and recommend that any differences between the proposed ELGs and the State's requirements be minimized.

B. Notice of Intent (NOI) Requirements

We believe the proposed permit needs to be clarified with regards to the NOI requirements and the discharge authorization date for a given project. Section VI (Provisions) indicates that PRDs (permit registration documents) are due 14 days prior to commencement of construction. However, permit coverage does not begin until the PRDs are "accepted." It is not clear what "accepted" means, what the review process is, or how much time might be involved.

Section XII.2 of the proposed permit provides that Regional Boards may request the submittal of SWPPPs. However, page 6 of the fact sheet indicates that all dischargers would be required to submit their SWPPPs electronically, which would seem to obviate the need for a request by the Regional Board. Section XII.2 also indicates that a Regional Board may schedule a public hearing, or take certain other actions such as requiring

revisions to SWPPPs. The permit needs to clarify the date when permit coverage begins for a given project in light of such contingencies. EPA's 2003 construction general permit includes permit language (see Part 2 of the permit) that the State Board could consider to address this matter. EPA posts all NOIs on its website for a 7-day public review period. Dischargers receive permit coverage at the end of the 7-day waiting period unless they receive notification to the contrary within the waiting period (EPA's 7-day review period would be 14 days for the State's permit). If there were concerns with a given project, or if a Regional Board wished to conduct a public hearing prior to permit coverage taking effect, the Regional Board would notify the discharger that permit coverage would not begin until after the Regional Board had completed such activities.

A list of the documents considered to be PRDs should also be provided. Further, we would suggest that the NOI requirements not be located under the relatively obscure heading of "Provisions" but rather be located within Section II.A under the heading of obtaining permit coverage.

C. Corrective Actions

Section VIII.I.3 of the proposed permit provides that dischargers must implement corrective actions (repairs or design changes) based on the result of inspections "as soon as possible." In the interests of enhancing the clarity and enforceability of the permit, we recommend that the permit be clarified on this matter. We would suggest that the corrective actions be implemented prior to the next anticipated storm whenever practicable, but not later than 7 calendar days following the inspection, unless impracticable. We would also suggest that the REAP include corrective actions as an indicated activity to be completed before a rain event whenever practicable.

Section VIII.I.4 refers to information for an inspection checklist described in Project Implementation Requirement J. However, Requirement J addresses training and qualifications rather than inspections.

D. Qualifying Local Programs

In May 2006, EPA sent a memorandum to all State permitting authorities encouraging them to consider and take advantage of the authority provided by 40 CFR 122.44(s) for "qualifying local programs" (QLPs). For municipalities with effective local requirements for sediment and erosion control, the regulations allow the permitting authority to substitute the local requirements for comparable requirements of the NPDES permit, thereby avoiding potential conflicts with local requirements and easing the burden on developers. We would encourage the State Board to consider local requirements around the State and whether there may be some QLPs which could be recognized in the proposed permit.

E. Permit Waiver for Emergency Construction

Finding No. 32 indicates that emergency construction activities required to protect public health and safety do not need coverage under the general permit. This is a continuation of a provision which has been in State construction permits since the first permit was issued in 1992. However, NPDES regulations do not provide for such a permit waiver. Rather than exempting these construction activities from permitting, we recommend that the State Board adopt a policy of enforcement discretion. We have attached appropriate examples developed by EPA in connection with Hurricane Katrina and Midwest flooding.

This issue came up in late 2007 in connection with the Southern California fires, whereby a permit waiver was provided regardless of the nature of the construction activity. While we recognize the need for flexibility when public safety is involved, we believe that enforcement discretion would appropriately address the matter and also be consistent with the CWA. We would further note that activities in response to events such as the Southern California fires would often qualify as maintenance as described in Finding No. 32, and not need a permit for that reason.

F. Oil and Gas Exemption

On May 23, 2008, the Ninth Circuit Court issued an opinion vacating EPA's regulations of June 12, 2006 (71 FR 33628) which addressed NPDES stormwater permitting requirements at oil and gas exploration, production, processing, treatment and transmission facilities. We will soon be posting on the EPA stormwater website (http://cfpub.epa.gov/npdes/home.cfm?program_id=6) a summary of the implications of the Court decision for stormwater permitting for these facilities. We recommend that Finding No. 32 be revised to include a synopsis of the information placed on the EPA website concerning this matter, when the information becomes available.

G. Enforceability of the Attachments to the Permit

To ensure that the requirements of the various attachments are enforceable, the permit should explicitly require compliance with them. We suggest the following phrase be added on page 8 in the first sentence after the Findings: "It is hereby ordered that all dischargers subject to this General Permit shall comply with the following, *including Sections I through XI and including Attachments A through L.*" Also, since the first section of the Order is currently labeled Section "II" rather than "I" as we believe the State Board intended, the total number of sections is 11 rather than the current 12.

H. Annual Reports

The fact sheet (page 38) mentions that annual reports are required to be submitted. However, this requirement is not found in the permit itself; the only mention of an annual

report in the permit is on page 14 (Section VI.8.g), in relation to non-stormwater discharges. The requirement for the annual report and the contents of the report need to be included in the permit.

I. Non-Stormwater Discharges

Section VIII.G.1 currently requires the discharger to implement measures to "control" all non-stormwater discharges. We recommend that the word "control" be replaced with "minimize the discharge of pollutants" in all non-stormwater discharges, since this more accurately expresses the intent of the permit. We also recommend that in Section 2.f.viii of Attachment H that the words "and/or unauthorized" be deleted to emphasize that the discharger is expected to have no such discharges.

J. Section IV.A.2 (Effluent Limitations)

We recommend that Section IV.A.2 be revised to replace the word "reduce" with the word "minimize" since "minimize" is more consistent with the intent of the permit. "Reduce" could refer to any amount of pollution control, while "minimize" implies a maximum effort to control pollution.

K. Section V.4 (Receiving Water Limitations)

We recommend that the Glossary (Attachment L) include a definition of the terms "pre-project equilibrium flow", "sediment supply regime" and "natural channel evolution process" to provide dischargers with additional information concerning how to comply with Section V.4.

L. Waters of the United States

Finding No. 32 indicates that discharges to non-jurisdictional waters (as determined by the U.S. Army Corps of Engineers (COE)) do not require permit coverage. We recommend that this section of the Finding be deleted since EPA may disagree with a COE jurisdictional determination, and the determination may later be reversed.

M. SWPPP Requirements

Section IX of the permit (Stormwater Pollution Prevention Plan (SWPPP)) should require that Attachment H be used as the framework for the SWPPP, and also explicitly require that the SWPPP be implemented. In addition, Section H.1 of Attachment H should require information to demonstrate compliance with all sections of the permit for which the SWPPP would include relevant information. Currently, Section H.1 only mentions Section VII; Sections VI and VIII should also be listed.

Section VIII.C.2 of the permit differs from Attachment H with regards to runoff and runoff controls for Risk Level 1 projects. Section VIII.C.2 provides that runoff and runoff controls are not required unless the quantity and quality evaluation deems them necessary. This does not agree with the requirements of Section H.4 of Attachment H. Attachment H should also have a section which addresses inspections, which would provide additional information related to the requirements of Section VIII.I of the permit.

N. New Development and Re-Development Standards

Section VIII.H.2 of the permit requires that the NOT include a demonstration of compliance with the new development and re-development standards as described in Attachment F; however, Attachment F requires this demonstration with the NOI. We believe Section VIII.H.2 should be revised to be consistent with Attachment F.

Section VIII.H.4 of the permit needs more explanation in the fact sheet. First, the basis for the "two acre" cutoff should be explained. In addition, the term "first order stream or larger stream" would seem to include all streams, yet the Board also appears to be trying to limit the applicability of the requirement.

O. Discharges of ATS Effluent to Sanitary Sewer Systems

Attachment E (Section 9.b) should require that discharges of ATS effluent to a sanitary sewer system comply with any pretreatment requirements of that system, or EPA pretreatment regulations if the system does not have a pretreatment program.

P. Attachment B (Sampling)

In Section E.9 of Attachment B, the reference to Section L should be to Section F (sampling locations). Also, the sampling timeframe in Table 3 differs from Section E.13; the two should be made consistent.

Q. Attachment I (Section P) (Penalty Amounts)

We recommend that the figure of \$27,500 (civil penalty) be updated to the current \$32,500, and further note that the amount may be adjusted in accordance with future revisions to 40 CFR Part 19.

R. CSO Stormwater Permit Exemption

Finding No. 32 cites 40 CFR 122.26(a)(k) as the basis for the stormwater permit exemption for discharges to combined sewers. This should be 40 CFR 122.26(a)(7).

Attachment Related to Comment II.E



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 30 2005

ASSISTANT ADMINISTRATOR
FOR ENFORCEMENT AND
COMPLIANCE ASSURANCE

Col. Richard Wagner
Chief Engineer
U.S. Army Engineer District, New Orleans
P.O. Box 6026
New Orleans, LA 70160-0267

Re: Enforcement Discretion Concerning Drainage Activities Performed by the
Army Corps of Engineers in the Aftermath of Hurricane Katrina

The United States Environmental Protection Agency (EPA) recognizes the great tragedy and harm caused yesterday by Hurricane Katrina. In particular, the extensive flooding to the City of New Orleans and surrounding area requires the need for a rapid response by the Army Corps of Engineers (Corps) to adequately drain the impacted areas of flood water.

The Clean Water Act, 33 U.S.C. 1251 *et seq.* requires a permit for the discharge of pollutants to waters of the United States. Because of the need for the Corps to address the situation immediately to ameliorate the situation and potential risk to human health and the environment, EPA will exercise its enforcement discretion to allow the Corps to discharge as necessary to waters of the United States. This exercise of enforcement discretion is effective immediately and will continue until midnight on September 30, 2005. If additional time proves to be necessary, we will work with you on an appropriate extension.

To the extent practicable, the Corps should take all reasonable steps to minimize potential impacts of such discharges on the quality of the waters of the United States.

If you have any questions regarding this letter, please contact Mr. Mark Pollins, Director, Water Enforcement Division, at (202) 564-2240.

Sincerely,


Granta Y. Nakayama

Attachment Related to Comment II.E



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 7 2005

OFFICE OF
GENERAL COUNSEL

MEMORANDUM

SUBJECT: Availability of Permit Exclusion for the Evacuation of Flood Waters by the U.S. Army Corps of Engineers Relating to Hurricane Katrina Recovery Efforts

FROM: Ann R. Klee *A. R. Klee*
General Counsel

TO: Richard E. Greene
Regional Administrator
EPA Region 6

I am responding to a question that has arisen regarding whether permits are required under the Clean Water Act for the evacuation of water by the U.S. Army Corps of Engineers from the City of New Orleans and other communities flooded by Hurricane Katrina. We recognize that the immediate removal of this flood water is essential to protect public health. We also recognize that the flood water may contain oil as well as pathogens and other hazardous substances resulting from the inundation of urban and industrial areas.

This memorandum does not address the issue of whether the movement of pollutants in these waters from one location to another constitutes a "discharge of a pollutant" as that term is defined in the Clean Water Act. However, under the Clean Water Act and EPA's implementing regulations, the discharge of pollutants to waters of the United States by point sources is typically regulated by permits issued by States (or in some cases EPA) under the National Pollutant Discharge Elimination System (NPDES) program. Both the statute and regulations, however, establish exceptions. Of these exceptions, at least one is applicable here. Under the circumstances presented here, no NPDES permit is required for the evacuation of these flood waters by the U.S. Army Corps of Engineers.

ANALYSIS

EPA's regulations at 40 C.F.R. § 122.3(d) provide an exclusion for "any discharge in compliance with the instructions of an On-Scene Coordinator pursuant to 40 CFR part 300 (The National Oil and Hazardous Substances Pollution Contingency Plan)." These regulations

implement Clean Water Act Section 311(c), which authorizes the President to "ensure immediate and effective removal" of discharges from onshore facilities of oil and hazardous substances that pose substantial threats to public health or welfare. Section 311(c) applies, for example, to oil and hazardous substances in the water flooding the City of New Orleans that present a threat of discharge to a navigable water or to shorelines adjoining a navigable water. In the case of New Orleans and other communities, oil and hazardous substances have been discharged from motor vehicles, industrial plants, and sewer systems, any of which constitute an "onshore facility" for purposes of Section 311. See Section 311(a)(10). Section 311 applies to *any* discharges of oil, even if the oil discharges are mixed with other wastes (excluding dredged spoil). See Section 311(a)(1); 40 C.F.R. § 300.5.

Section 311(c) requires that the removal of oil and hazardous substances – and actions to minimize damage from oil and hazardous substance discharges – shall be in accordance with the National Contingency Plan "to the greatest extent possible." Section 311(d)(4); see Section 311(c)(1)(A). The National Contingency Plan is codified at 40 C.F.R. part 300. It is implemented by an On-Scene Coordinator, who is defined in 40 C.F.R. § 300.5 as "the federal official predesignated by EPA or the [U.S. Coast Guard] to coordinate and direct responses . . . under the NCP [pursuant to Section 311]." Section 311(d)(4) gives the On-Scene Coordinator the authority to apply the provisions of the National Contingency Plan in a flexible manner and to issue instructions accordingly.

In New Orleans and other communities, Hurricane Katrina flood waters contain oil and hazardous substances. We understand that an EPA On-Scene Coordinator is in place and is conducting a Section 311(c) removal action pursuant to the provisions of the National Contingency Plan in 40 C.F.R. part 300. This removal action includes the evacuation of Hurricane Katrina flood waters by the U.S. Army Corps of Engineers. Under EPA's NPDES permitting regulations at 40 C.F.R. § 122.3(d), therefore, no NPDES permit is required for this flood water evacuation.

If you have any questions, please call me or ask your staff to call Carol Ann Siciliano (202-564-5489) or Scott Sherman (202-564-1789).

cc: Benjamin Grumbles
Tom Dunne
Debbie Dietrich
Charles Sheehan
Carol Ann Siciliano
Scott Sherman

Attachment Related to Comment II.E

* Pendergast
Brunner

NOTE

SUBJECT: Enforcement Position on Facilities Affected by Midwest
Floods

FROM: Carol Galloway *Carol*

TO: Mike Cook

Recently, you asked the Division to prepare a summary of the position that should be taken with regards to Enforcement against facilities in the Midwest which have flood related NPDES violations. You also requested a statement on the permit "upset clause" and unpermitted discharges in the flood area which I understand will be provided separately to you by the Permits Division.

In preparing the attached position paper on enforcement in the flood area, we have coordinated with the Permits Division, the Office of Enforcement, and Brian Maas (OGWDW). Brian was asked by Tudor Davies to prepare a joint CWA/ SDWA position on flood related enforcement. Brian's paper is also attached.

Please let us know if you need any additional information.

cc: Jim Pendergast
Brian Maas

OWEC Position Paper

The U.S. Environmental Protection Agency (EPA) Position On Enforcement Response to Violations of the Clean Water Act (CWA) Caused by the 1993 Midwest Flood

The Midwest flood in 1993 has resulted in a number of facilities regulated under the CWA to have difficulty in complying with federal environmental requirements. This position statement addresses facilities regulated under the CWA's National Pollutant Discharge Elimination System (NPDES) including pretreatment requirements.

Enforcement Discretion

EPA has a responsibility to ensure the greatest possible protection of human health to the environment from sources of contamination. As such, all regulated facilities are expected to comply with their NPDES requirements to the best of their ability. To the extent that impacted facilities use their best efforts to return to compliance as quickly as possible and minimize any harmful environmental impacts, EPA will, in appropriate circumstances, use its discretion to forego formal response to violations.

For unpermitted discharges, enforcement discretion would, as appropriate, be exercised where the discharger had taken reasonable care to avoid the violations and no other reasonable alternative was available.

Examples of how enforcement discretion might be applied for flood related violations follows.

- A. Situations where in most instances EPA would not take action:
- o Discharges without a permit to drain flooded areas behind levees or in homes.
 - o Sewage discharges from wastewater treatment plants which are partially or fully submerged.
 - o Discharges of wastewater into sewer systems in order to prevent severe bodily injury or substantial property loss.
 - o Facilities drawing floodwaters out of buildings into sewers with prior POTW authorization.

B. Situations where EPA would consider taking action:

- o Dumping of wastes from unflooded industrial or commercial facilities into a flooded area.
- o Discharges of untreated wastewater by operating production facilities which have only their treatment plant submerged (need to halt production is not an allowable reason for violating a permit).
- o Discharge of industrial wastewater into collection systems/POTWs which have ordered a temporary halt of such discharges.
- o Intentional discharge of substances, including solid and hazardous wastes, prohibited from discharge into sewer systems.

Identifying and Tracking of Violations

EPA and States will identify permittees impacted by the flood so that the status of these facilities can be monitored closely.

EPA will track flood related violations in our standard compliance reports on noncompliant facilities; those in significant noncompliance (SNC); as well as those on our Exception List (repeat SNC). We expect there will be an increase in violations, SNC and EL facilities, as the affected facilities begin operation. Our computerized compliance data base will specifically identify violations at these facilities including nonreporting of monitoring data due to flood conditions. This approach allows us to monitor the status of each affected permittee and also to identify those flood related violations that will not likely be subject to any formal enforcement response. The Quarterly Noncompliance Report (QNCR), which is available for public review, will include violations of flood impacted facilities.

**EPA's Enforcement Response to Violations
of the Clean Water Act and the Safe Drinking Water Act
Caused by the Midwest Flood**

The Midwest flood has resulted in a number of facilities regulated under the CWA and the SDWA having difficulties in complying with federal environmental and public health requirements.

EPA has the responsibility to assure the protection of human health and the environment to the greatest extent possible from sources of contamination.

As a result of the Midwest floods, some facilities will be unable to comply due to conditions beyond their control. To the extent these facilities use their best efforts to limit or minimize their problems, EPA will use its discretion to forgo formal response to violations.

EPA will work with States and facilities to determine what measures, if any, specific facilities can take to minimize public health and environmental damage. These measures will be based on the specific circumstances of the facility.

Facilities regulated under the CWA and the SDWA which are physically inaccessible will not be expected to risk human harm to fulfil their regulatory responsibilities. Discharges to waters of the U.S. which are made to protect life and property will not be the subject of any action by EPA if there are no reasonable alternatives to the situation.

Water treatment plants are expected to take every measure to provide water which is safe to drink and to notify the public through any means possible where the water they provide may be contaminated.

Facilities in areas not directly affected by the flood are expected to comply fully with the law. During this emergency period, facilities caught dumping pollutants or otherwise taking advantage of this time of uncertainty in an effort to save compliance costs will be prosecuted to the fullest extent of the law.

EPA and States will identify regulated facilities impacted by the flood. Violations due to the flood will be included in our standard noncompliance reports for the public and EPA management. The status of impacted facilities will be monitored closely.

Potential Compliance Problems
Under the SDWA and CWA

A. Situations where EPA generally would not take action

1. Wastewater and drinking water treatment plants which are fully under water and therefore not operating.
2. Wastewater and drinking water treatment plants which have come partially back in operation or are partially submerged but are unable to operate their full treatment system.
3. Discharges without authorization into waters of the U.S. or sewer systems to drain flooded areas to the extent such activities are necessary to prevent bodily injury or property damage, i.e. water accumulation behind levees or in homes.
4. Unintentional discharges of contaminated runoff due to flooding of industrial or commercial plant sites which cannot be reasonably controlled.
5. Municipal wastewater treatment plants which are unable to fully operate their systems due to utility failures or insufficient operating staff due to conflicting priorities from the emergency situation, to the extent that good faith efforts are made to minimize problems.

B. Situations where EPA would consider action

1. Intentional unauthorized dumping of wastes from industrial or commercial facilities to circumvent environmental requirements because of the uncertainty of the situation.
2. Discharges of untreated wastewater by production facilities which have only their treatment plant submerged or otherwise unoperational.
3. Facilities continuing to discharge industrial wastewater into collection systems/POTWs which have ordered a temporary halt of such wastewater.
4. Facilities which intentionally introduce prohibited wastes into sewer systems.
5. The dumping of flood related debris into wetlands where there are feasible alternatives.