# NPDES Compliance Inspection Manual

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## *Disclaimer*

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This version of the NPDES Compliance Inspection Manual is released as an interim version in order to allow time for inspectors to use the Manual and provide feedback to EPA's Office of Enforcement and Compliance Assurance (OECA). OECA is interested in user comments that will enhance a future final version of the Manual. In addition, as OECA's efforts with states through E-Enterprise continue, this Interim Revised NPDES Compliance Inspection Manual will inform development of Smart Tools software and hardware for NPDES inspectors to use in the field.

Please send your comments on this Interim Revised NPDES Compliance Inspection Manual to OECA at NPDEScompliance@epa.gov by December 31, 2017.

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# Appendix A – EPA Order 3500.1, Training and Development for Individuals who lead Compliance Inspections/Field Investigations

EPA
ORDER

**Classification No.: 3500.1**
**Approval Date: 06/19/2014**

# TRAINING REQUIREMENTS FOR EPA PERSONNEL WHO ARE AUTHORIZED TO CONDUCT CIVIL COMPLIANCE INSPECTIONS/FIELD INVESTIGATIONS AND EPA INSPECTOR SUPERVISORS

1. **PURPOSE.** This order establishes minimum training requirements for U. S. Environmental Protection Agency employees to obtain and maintain the EPA authorization to conduct civil compliance inspections/field investigations or collect compliance samples under federal environmental statutes. It also addresses the inclusion of certain requirements in agency administered contracts and Senior Environmental Employment Program cooperative agreements if individuals are to be authorized to conduct inspections on behalf of the agency. This order also requires that first-line supervisors of compliance inspectors/field investigators complete minimum training. Finally, Item 3 of this order references state and tribal inspector training and credential issuance requirements.

2. **POLICY.** Prior to conducting environmental compliance inspections/field investigations, individuals must complete training as required by Item 4 of this order; in addition, the decision as to whether it is appropriate to issue a credential to the individual resides with the individual's supervisor, and is based on the supervisor's assessment of the employee's ability to conduct inspections and represent the agency. Supervisors of compliance inspectors/field investigators and compliance sampling specialists must complete and document completion of training requirements, even if they do not receive a credential or conduct compliance inspections/field investigations.

3. **APPLICABILITY.** This order applies to all agency personnel who are authorized or seeking authorization to conduct civil compliance inspections/field investigations or to collect compliance samples under any of the agency's statutes and their supervisors; in addition, the order requires that assistant administrators and regional administrators are responsible for ensuring that the training requirements found in Item 4 of this order are met by the agency employees affected by this order. All agency administered contract statements of work and SEE program cooperative agreements, which govern the activities of contractor employees and SEE enrollees conducting compliance

inspections or civil investigations. Training requirements for employees of state and tribal governments who are authorized to conduct compliance inspections/field investigations on behalf of the agency are established in the agency's *Guidance for Issuing Federal EPA Inspector Credentials to Authorize Employees of State/Tribal Governments to Conduct Inspections on Behalf of EPA* issued September 30, 2004 and any subsequent updates. This order does not apply to credentials issued by the Office of Inspector General, or those issued to agency criminal investigators/special agents.

4. **TRAINING REQUIREMENTS.** The agency's training program for persons being authorized to conduct compliance inspections/field investigations consists of four parts: occupational health and safety curriculum, basic inspector curriculum, program-specific curriculum and annual refresher course requirements. Note: For agency employees seeking authorization as compliance sampling specialists, abbreviated training requirements are defined in the memorandum entitled *Guidance for Documenting Required Inspector Training for EPA Employees Prior to Issuing Credentials (pursuant to EPA Order 3500.1 and 3510) If Training Certificates Are Not Available* issued by Lisa Lund, Director, Office of Compliance, on December 2, 2009.

    a. Occupational health & safety curriculum: All agency employees are required to complete applicable occupational health and safety training as required by Order 1440.2, *Safety and Health Environmental Management Guidelines* 51 and 56, and associated guidance[22] before engaging in any field activities. The agency's Safety, Health and Environmental Management Program defined in Order 1440.1, establishes basic, intermediate, advanced and refresher level training requirements for compliance inspectors/field investigators in its directives and guidelines. Note: Separate from this training requirement, Order 1440.2 requires occupational medical monitoring for certain field activities.

    b. Basic inspector curriculum: This training provides a comprehensive overview of the knowledge and skills needed to conduct compliance inspections/field investigations under agency statutes. It consists of the basic inspector-training course, which integrates legal, technical, and administrative subjects with communication skills. The basic inspector curriculum also includes a requirement for reading and being aware of compliance monitoring policies that apply to all individuals who conduct inspections/field investigations including Department of Transportation Hazardous Materials Training Requirements, Small Business Regulatory Enforcement Fairness Act information sheet requirements, routine agricultural biosecurity procedures and training on data collection and reporting procedures and regional quality assurance plans.

[22] Flexibility in the requirements of Order 1440.2 can be found in the July 19, 2009 memorandum from Howard O. Wilson to Phyllis Flaherty entitled "Safety and Health Training Requirements for EPA Compliance Inspectors and Field Investigators" and the December 4, 2009 memorandum from Wesley J. Carpenter to Phyllis Flaherty entitled "Update on Safety and Health Training Requirements." For more information, see the agency's Safety, Health, and Environmental Management website.

c. Program-specific curriculum: This curriculum establishes the required and recommended training in legal, programmatic and technical subjects for each major media program or specific program compliance inspection/field investigation activity. If the program-specific curriculum for each major media program or specific program compliance inspection/field investigation activity is not specified, e.g., new statutes, then a minimum of 24 hours of appropriate and relevant program-specific training and completion of a minimum of two (8 hour) days of on-the-job training or two compliance inspections/field investigations (whichever is longer) must be completed. The supervisor shall determine the appropriateness and relevance of the training based on the type and nature of work to be performed. Additional program-specific specialized training is recommended to further develop inspection skills.

d. Refresher course requirements: All individuals who are authorized to conduct compliance inspections/field investigations on behalf of the agency (which may include first-line supervisors or team leaders) must complete annual refresher training as follows:

   i. Occupational health and safety training as established by SHEMP. Existing requirements include a minimum of eight hours of refresher hours annually for compliance inspectors/field investigators, as found in SHEMP directives and guidelines;

   ii. Basic inspector and program-specific curriculum identified by first-line supervisors as relevant to their compliance inspectors/field investigators and training identified in the mandatory refresher training section for each media; and

   iii. Additional training identified by first-line supervisors to improve proficiency in specialized areas. This includes training necessary for the inspector to become more proficient in a specific media program, qualified in additional regulations, qualified for inspecting additional industries or to become proficient in multi-media work.

e. Exceptions to the training requirement:

   i. Occupational health & safety courses: Any exceptions to the required occupational health and safety curriculum must be in accordance with SHEMP requirements.

   ii. Basic inspector and program-specific curricula: Any exceptions to the basic inspector or program-specific curricula must be approved in writing by the appropriate assistant administrator or regional administrator based on an evaluation by the first-line supervisor or team leader of the compliance inspector/field investigator's knowledge, experience and relevant training. Exceptions should be given only in unusual circumstances, and copies of the approval should be maintained.

5. **RESPONSIBILITIES.** This section lists the primary responsibilities for implementing this order.

    a. Compliance inspectors/field investigators: Any individuals who are authorized or seeking authorization to conduct compliance inspections/field investigations on a full or part-time basis are responsible for:

        i. Completing all applicable training listed in Item 4 of this order before applying for a new or renewal credential, or conducting an inspection in a specific media. (Note: The process for applying for and issuing credentials is detailed in Order 3510: *EPA Federal Credentials for Inspections and Enforcement of Federal Environmental Statutes*.) Prior completion of on-the-job training is not required to apply for an inspector-in-training credential (agency employees only) or a Temporary Letter of Authorization. Individuals who have not completed the media specific training for the specific program under which a compliance inspection/field investigation is being conducted and who are using an inspector-in-training credential or Temporary Letters of Authorization must be accompanied by a credentialed inspector who has completed the required training for the program under which they will be conducting their compliance inspection/field investigation;

        ii. Providing documentation to their first-line supervisor of completion of relevant training, including dates completed;

        iii. As needed, assisting in the preparation of an individual development plan or other training plan, which addresses training necessary to continue to meet the requirements of this order; and

        iv. Applying and maintaining the knowledge, skills, and techniques acquired through training to ensure that compliance inspections/field investigations are accomplished in a technically and legally sound manner.

    b. Compliance sampling personnel: Any individuals who are authorized or seeking authorization to collect samples during a compliance inspection/field investigation are responsible for:

        i. Completing all applicable training for compliance sampling personnel as defined in the memorandum entitled *Guidance for Documenting Required Inspector Training for EPA Employees Prior to Issuing Credentials (pursuant to Order 3500.1 and 3510)* If Training Certificates Are Not Available issued by Lisa Lund, Director, Office of Compliance on December 2, 2009;

        ii. Providing certificates or appropriate documentation in accordance with the December 2, 2009 memorandum to their first-line supervisor of completion of required training, including dates completed;

        iii. Assisting, as needed, in the preparation of an IDP which addresses training necessary to continue to meet the requirements of this order; and

iv. Applying and maintaining the knowledge, skills, and techniques acquired through training to ensure that compliance samples are collected in a technically and legally sound manner.

c. First-line supervisors or team leaders: All first-line supervisors or team leaders of compliance inspectors/field investigators and of compliance sampling specialists are responsible for:

i. Completing the following minimum training requirements within one year of assuming a first-line supervisor or team leader position:

(i) Health and safety requirements (knowledge and understanding), unless performing any field activities. If any agency employee including a first-line supervisor or team leader engages in field activities, they are required to complete applicable occupational health and safety training as defined in SHEMP directives and guidelines under Orders 1440.1 and 1440.2;

(ii) Basic inspector curriculum, Item 4(b) of this order;

(iii) Environmental Statute Review course or equivalent training course on environmental statutes;

(iv) Documented self-study (such as participating in on-the-job training) of the media they are responsible for, resulting in development of a "working knowledge," as defined in Item 6(h) of this order;

(v) Self-study to ensure knowledge of Order 3510: *EPA Federal Credentials for Inspections and Enforcement of Federal Environmental Statutes and Other Compliance Responsibilities*;

(vi) *Self-study of the Supervisor's Guide to Order 3500.1*; and

(vii) Training to ensure knowledge of the region's data collection/reporting procedures for inspection information, including the Inspection Conclusion Data Sheet;

ii. Obtaining knowledge and understanding of multi-media regional specific procedures and criminal environmental issues;

iii. Completing all applicable training listed in Item 4 of this order if first- line supervisors or team leaders are also responsible for conducting compliance inspections/field investigations;

iv. Providing oversight, quality assurance, and quality control of inspection/field reports, including sampling information. This responsibility may be delegated to a senior inspector with significant experience in that same program;

v. Ensuring quality compliance inspections/field investigations by using performance standards, periodic appraisals and appropriate assignments to

provide for the development and recognition of personnel engaged in the compliance monitoring function;

vi. Identifying employees who require training, ensuring that employees comply with the requirements of this order, and maintaining applicable records;

vii. Identifying additional program-specific training as appropriate for the type of work that is being conducted;

viii. Reviewing and evaluating previously trained credentialed inspectors/field investigators and compliance sampling specialists, on an annual basis, to determine if they are in need of additional training for professional skills development, including training in new or revised policies, guidelines or legislation;

ix. Documenting and placing in the compliance inspector/field investigator or compliance sampling specialist's personnel file any approved exceptions, signed by the regional or assistant administrator, to this order;

x. Requiring compliance inspectors/field investigators provide documentation of completed training to their first-line supervisor/team leader for approval prior to entry into a data tracking system that meets the requirements in 5(f)(8)(i-v) of this order;

xi. Documenting and maintaining a list of authorized compliance inspectors/field investigators and compliance sampling specialists;

xii. Ensuring that compliance inspector/field investigator or compliance sampling specialists credentials are only requested for personnel whose first-line supervisors have determined there is a need for a credential, have completed their necessary training requirements, have documentation of training completion and are deemed qualified by their first-line supervisor to conduct quality compliance inspections/field investigations or collect compliance samples on behalf of the agency. (Note: Prior completion of on-the-job training is not required to request an inspector-in-training credential (agency employees only) or a Temporary Letter of Authorization, but training must be completed prior to requesting a compliance inspector/field investigator credential.);

xiii. Ensuring that compliance inspectors/field investigators and compliance sampling specialists have the appropriate credential and have documented completion of program-specific training for the program in which they will be conducting their inspection/field investigation or collecting compliance samples;

xiv. Ensuring that individuals who have not completed the training requirements, but for whom their first-line supervisor has determined there is a need to participate in a compliance inspection/field investigation, for such purposes as on-the-job training or providing specialized expertise:

(viii) Only conduct inspections when accompanied by a credentialed inspector who has completed the required training for the program; and

(ix) Have either:

(a) A Temporary Letter of Authorization, as defined in Item 6(d), signed by the appropriate assistant administrator or regional administrator or their appropriate delegated authority;

(b) An inspector-in-training credential (agency employees only), as defined in Item 6(e), for the program in which they will be conducting their compliance inspections/field investigations; or

(c) A current credential (agency employees only) issued based on completion of training for another media program;

xv. Ensuring when the first-line supervisor has determined there is a critical need in emergency situations, individuals who have completed the training requirements, but have not received an agency credential, have a Temporary Letter of Authorization, as defined in Item 6(d), signed by their assistant administrator or regional administrator, or their appropriate delegated authority before conducting all or part of a compliance inspection/field investigation; and

xvi. Ensuring that compliance inspectors/field investigators and compliance sampling specialists are knowledgeable in the region's data collection and reporting procedures for inspection information.

d. Assistant administrator for Enforcement and Compliance Assurance: The assistant administrator for OECA is responsible for:

i. Updating this order, overseeing and evaluating implementation of the overall program requirements, including updating the training requirements required by this order, as needed;

ii. Developing, updating and disseminating student materials and instructor guides for the basic inspector curriculum to the regions and coordinating the selection of and maintaining a list of instructors from the regions and headquarters through the National Enforcement Training Institute e-Learning Center; and

iii. Identifying and approving data systems for headquarters and the regions that will enable first-line supervisors, team leaders, and compliance inspectors/field investigators to track annual training accomplishments in order to meet the requirements of this order.

e. Assistant administrator for Administration and Resources Management: The assistant administrator for OARM is responsible for:

i. Updating and providing sufficient materials for occupational health and safety training or approving non-agency courses to meet the requirements of SHEMP and reviewing program-specific health and safety training;

ii. Training and evaluating agency personnel designated as instructors for delivering the occupational health and safety training; and

iii. Coordinating and disseminating a timely schedule of occupational health and safety classes, in consultation with OECA, program offices and the regions.

f. Assistant administrators: The assistant administrators of offices which engage in compliance monitoring are responsible for:

i. Developing, updating, and disseminating materials and schedules for classes under the program-specific curriculum, in consultation with regions and the States;

ii. Implementing the requirements of this order within their areas of jurisdiction, including periodically evaluating implementation;

iii. Responding to individual requests for training exceptions. (Note: This can only be delegated to the deputy assistant administrator);

iv. Ensuring that agency administered contracts and SEE Program cooperative agreements, involving compliance inspections/civil investigations that the completion of training, as required by this order, is incorporated into the appropriate contract statements of work or SEE program cooperative agreements and enrollee position descriptions;

v. Collaborating with the regions and OECA in the development and update of program-specific curriculum requirements;

vi. Requesting credentials from OARM for personnel whose supervisors have determined there is a need for a credential, have completed their necessary training requirements, have documentation of training completion, and are deemed qualified by their first-line supervisor to conduct quality compliance inspections/field investigations on behalf of the agency and ensuring that individuals conducting compliance inspections/field investigations have the appropriate credentials;

vii. Identifying a single point-of-contact responsible for auditing the office to ensure the requirements of this order are being met, for coordinating with OECA;

viii. Maintaining training information in a data system that can:

(i) Track names of compliance inspectors/field investigators and their supervisors;

(ii) Maintain a list of courses and other training with course names, hours, required frequency of completion, and descriptions;

(iii) Record completion dates and due dates for required courses and other training for inspectors;

(iv) Produce reports that list due dates for required refresher training for compliance inspectors/field investigators within user defined time periods; and

(v) Provide e-mail alerts to supervisors that inform them of when their staff's refresher training is due;

ix. Requesting inspector-in-training credentials, as defined in Item 6(e), from OARM for those personnel whose supervisors have determined there is a need for a credential to complete on-the-job training requirements; and

x. Providing Temporary Letters of Authorization, as defined in 6(d), on an as-needed basis, and ensuring that records of such authorization are maintained, if issued.

g. Regional administrators: The regional administrators are responsible for:

i. Implementing the requirements of this order within their areas of jurisdiction, including periodically evaluating implementation;

ii. Responding to individual requests for training exceptions. (Note: This can only be delegated to the deputy regional administrator);

iii. Ensuring that agency administered contracts and cooperative agreements awarded under the SEE program, involving compliance inspections/civil investigations that the completion of training, as required by this order is incorporated into appropriate contract statements of work or SEE program cooperative agreements and enrollee position descriptions;

iv. Supporting in-house instruction for the basic inspector curriculum by working with OECA to identify regional personnel to serve as classroom instructors;

v. Requesting credentials from OARM for personnel whose supervisors have determined there is a need for a credential, have completed their necessary training requirements, have documentation of training completion, and are deemed qualified by their first-line supervisor to conduct quality compliance inspections/field investigations on behalf of the agency and ensuring that individuals conducting compliance inspections/field investigations have the appropriate credentials;

vi. Identifying a single point-of-contact responsible for auditing the region to ensure the requirements of this order are being met, for coordinating with OECA, and for maintaining information in a tracking system that meets the requirements in 5(f)(8)(i-v) of this order;

vii. Requesting inspector-in-training credentials, as defined in Item 6(e), from OARM for those agency employees whose supervisors have determined

there is a need for a credential to complete on-the-job training requirements; and

viii. Providing Temporary Letters of Authorization, as defined in 6(d), on an as-needed basis and ensuring that records of such authorization are maintained, if issued.

6. **DEFINITIONS**

a. Compliance inspector/field investigator: Any individual authorized, through the issuance of a credential, to conduct or oversee for the purpose of investigating and documenting the compliance status of facilities or sites with applicable laws, standards, regulations, permits, and/or of supporting appropriate enforcement action (administrative, civil judicial or criminal).

Any credentialed agency employee performing these activities regardless of job or credential title or program shall be considered a compliance inspector/field investigator for the purpose of this order. The terms compliance inspector/field investigator will be used throughout this order. This does not include individuals who engage in field activities or investigations for purposes such as observing the inspection, research and development or programmatic activities unrelated to compliance monitoring or enforcement, or investigations that do not involve field work. This also does not include individuals who receive credentials issued by OIG or to agency criminal investigators/special agents.

Individuals performing work as on-scene coordinators and remedial project managers under the Comprehensive Environmental Response Compensation and Liability Act program who do not conduct inspections/field investigations as part of their job function, are not covered by the definition of the compliance inspection/field investigator. Those on-scene coordinators and remedial project managers will receive credentials that authorize them to carry out the functions of their position; however, on-scene coordinators and remedial project managers who do conduct field inspections/field investigations are covered by this definition and are subject to this order. Additional program guidance has been developed to assist regions in distinguishing these functions from other programmatic responsibilities.

b. Compliance sampling specialist: Any individual authorized and issued a credential to collect samples for the purpose of documenting compliance with applicable laws, standards, regulations, permits, and/or of supporting appropriate enforcement action (administrative, civil judicial or criminal). The situations under which an agency employee may receive credentials as a compliance sampling specialist are defined in the memorandum entitled *Guidance for Documenting Required Inspector Training for EPA Employees Prior to Issuing Credentials (pursuant to EPA Order 3500.1 and 3510) If Training Certificates Are Not Available* issued by Lisa Lund, Director, Office of Compliance on December 2, 2009.

c. First-line supervisors of inspectors: This includes:

i. An individual who is the immediate supervisor of the day-to-day work of personnel authorized to conduct civil compliance inspections/field investigations.

ii. An individual in a team leader position, if they perform similar functions as a first-line supervisor.

d. Temporary Letter Credential (also known as a Temporary Letter of Authorization):[23] A letter credential signed by an assistant administrator or regional administrator or their appropriate delegated authority that authorizes an individual to conduct all or part of a compliance inspection/field investigation under a specific statute. Temporary Letters of Authorization will only be issued for the purposes of obtaining on-the- job training, providing specialized expertise in the program area or for emergency situations. When a Temporary Letter of Authorization is issued to an individual who has not completed the required training, that individual must be accompanied by a credentialed compliance inspector/field investigator who has completed the required training for the program in which they will be conducting their inspection/field investigation. The letters will not be used for individuals who conduct inspections on a routine basis. The letters will be valid for the time period outlined in Order 3510, and are not renewable.

e. Inspector-in-training credential: A credential issued to agency employees only by OARM that authorizes an individual to conduct all or part of a compliance inspection/field investigation under specific statutes in order to complete on-the-job training requirements. When an individual issued an inspector-in-training, credential participates in an inspection, that individual must be accompanied by a credentialed compliance inspector/field investigator who has completed the required training for the program in which they will be conducting their inspection/field investigation on all inspections. Inspector-in-training credentials will be valid for a maximum of one year.

f. Curriculum: The defined content presented in a sequence of supervised self-study, formal on-the-job and/or classroom training:

i. Supervised self-study: Knowledge gained through independent, personal study (such as computer-based training or web-based training) with oversight by a first-line supervisor, team leader, and/or an experienced inspector/investigator.

ii. On-the-job training: Structured training that relates to principles, theories or work-related skills which are demonstrated and applied in the field environment during an actual compliance inspection/field investigation.

[23] A Temporary Letter Credential is also known, and commonly referred to, as a Temporary Letter of Authorization or Letter of Authorization.

iii. Classroom/classes: Any form of instruction, (flexible in format and size to include seminars, workshops, lecture-type or video-assisted classes, or question-and-answer sessions following prior independent self- study) that foster group interaction with an instructor or an experienced inspector/investigator.

iv. e-Learning: Comprises all forms of electronically supported learning and teaching, including but not limited to training found on the NETI e-Learning Center.

g. Completing required training: Satisfactorily completing all training, as defined in Item 4 of this order.

h. Working knowledge: A sufficient knowledge of statutory/regulatory requirements, field inspection methods, and some experience accompanying an inspector/investigator for a particular program. This knowledge would be required as the minimum needed to be able to evaluate the completeness and quality and sign-off on inspection reports.

7. **REFERENCES**

a. Order 1440.2, *Health and Safety Requirements for Employees Engaged in Field Activities* issued April 23, 2013.

b. Order 1440.1, *Safety, Health and Environmental Management Program (SHEMP)* issued November 20, 2012.

c. Safety, Health, and Environmental Management Guidelines 51: Safety, Health and Environmental Management Training, and 56: Job Hazard Analysis.

d. *Guidance for Documenting Required Inspector Training for EPA Employees Prior to Issuing Credentials (pursuant to Order 3500.1 and 3510) If Training Certificates Are Not Available*, memorandum from Lisa Lund, Director, Office of Compliance, issued December 2, 2009.

e. *EPA Credential and Inspector Training Policy Compendium,* Office of Enforcement and Compliance Assurance, Office of Compliance. Contact: Compliance Policy Staff, 202-564-7002.

f. Order 3510, *EPA Federal Credentials for Inspections and Enforcement of Federal Environmental Statutes and Other Compliance Responsibilities* revised October 31, 2012.

g. *Guidance for Issuing Federal EPA Inspector Credentials to Authorize Employees of State/Tribal Governments to Conduct Inspections on Behalf of EPA* issued September 2004.

h. *Guidance for Issuing Federal EPA Inspector Credentials to Employees of Contractors to Conduct Inspections on Behalf of EPA* issued May 31, 2013.

i. Guidance for Issuing Federal EPA Inspector Credentials to Senior Environmental Employment Program Enrollees to Conduct Inspections on Behalf of EPA issued September 30, 2013.

j. Supervisor's Guide to Order 3500.1, issued October 2003.

# Appendix B – EPA Order 3510, EPA Federal Credentials for Inspections and Enforcement of Environmental Statutes

*This document is relevant only to inspectors who are EPA employees and other inspectors who have EPA credentials to conduct inspections on behalf of EPA. You can request access to the document by emailing the Office of Compliance at NPDESCompliance@epa.gov.*

# Appendix C –
# EPA Order 1440.2,
# Health and Safety Requirements for Employees Engaged in Field Activities

EPA
ORDER

**Classification Number:** **1440.2**
**Approval Date:** **01/10/2011**
**Administrative Change:** **04/23/2013**

# EPA ORDER
# SAFETY AND HEALTH TRAINING REQUIREMENT FOR AGENCY EMPLOYEES

1. **PURPOSE**

   This Environmental Protection Agency (EPA) Order establishes policy, responsibilities and mandatory requirements for occupational safety and health training and certification of Agency employees.

2. **OBJECTIVES**

   The objectives of the safety and health training and certification programs for Agency employees are:

   a. To ensure that all EPA employees are aware of the potential hazards they may encounter during the performance of general and job-specific work activities;

   b. To provide the knowledge and skills necessary to perform the work with the least possible risk to personal safety and health;

   c. To ensure that Agency program goals are accomplished in a safe and healthful manner as feasible; and

   d. To ensure that EPA employees can safely disengage themselves from an actual hazardous situation that may occur during general and job-specific work activities.

3. **BACKGROUND**

   Agency employees engage in a broad range of activities including routine administrative tasks in office settings, materials handling operations in warehouses, facility and equipment maintenance, environmental sampling, inspections and criminal investigations, analysis and monitoring, training and exercises, and emergency response activities.

Many of these activities involve entering and working in environments with known and unknown hazards. Protection cannot be engineered into all situations, and protection of personnel involves training employees in safe operational procedures that may also include the proper use of appropriate personal protective clothing and equipment.

4. **POLICY**

It is EPA policy to carry out its activities in a manner that ensures the protection of its employees and compliance with regulations. All EPA Program Offices and Regions must support a comprehensive safety, health and environmental training program. Such programs provide knowledge and skills necessary to perform job-related tasks with the least possible risk. Training is necessary for preventing or minimizing injuries and illnesses in the workplace and is required under numerous safety, occupational health and environmental standards.

5. **APPLICABILITY**

This Order applies to all EPA organizational units and locations that have Agency employees.

6. **DEFINITIONS**

a. The term "certification" means that the employee has successfully completed the minimum classroom and hands-on training requirements for the specified need, and the appropriate local and/or programmatic health and safety official has certified or attested that the employee met these requirements.

b. The term "employee" is defined as any full, part-time, temporary, or permanent EPA employee; a detailee to EPA from another government agency; an individual enrolled in the EPA Senior Environmental Employment Program; a student assigned to EPA; an EPA stay-in-school program participant; an intern or fellow assigned to EPA; or any other individual who is designated on a case-by-case basis by the Director of the Safety, Health, and Environmental Management Division (SHEMD) or senior Agency officials. Furthermore, this term includes EPA top management officials, supervisors, safety and health personnel, safety committee members, and employees who are representatives of employee groups.

c. The term "field activities" means EPA program activities that are conducted by EPA employees outside of EPA administered facilities. These activities include, but are not limited to, criminal investigations, compliance inspections and sampling conducted under all EPA statutes, hazardous material spill and waste site investigations, and field duties with EPA's Response Support Corps or Incident Management Teams.

d. "Job Hazard Analysis (JHA)" is a systematic technique to identify, characterize, and evaluate the demands, potential health, and physical hazards or risks

associated with an employee's job description and tasks. The purpose of JHA is to ultimately develop and confirm recommended safe work procedures and controls to eliminate/control the associated hazards.

e. The term "laboratory activities" means EPA activities that are conducted in a mobile or fixed laboratory workplace by EPA employees who may be exposed to hazardous chemicals or agents in the course of his or her assignments.

f. The term "other activities" means all EPA activities where additional safety and health training or awareness needs are identified beyond traditional field or laboratory settings. Examples include those involving repetitive motion in office settings, warehouse and materials handling activities, grounds and equipment maintenance activities, or other activities where safety and health training or awareness is required for employees to meet operational needs.

g. The term "safety and health training" means scheduled training approved and sponsored by EPA and conducted by Agency employees or contractors that is designed to develop, improve or upgrade the safety and health knowledge of EPA employees. For the purposes of this Order, various types of training include:

i. Orientation. Fundamental safety and health training on subject areas that all employees receive during their orientation period.

ii. Initial. Training in addition to the subject areas covered during the employee orientation period that meets a particular need identified through a JHA, a specific authority, EPA guidance, local policy, etc., prior to assignment or before the employee performs the affected work.

iii. Refresher. Training that may be provided on a routine basis (e.g., annually) to build upon previous knowledge or training in a specific subject and to keep skills up to date. The requirements for refresher training are usually specified under a specific authority, JHA, EPA Guidance, local policy, etc.

7. **RESPONSIBILITIES**

a. Administrator. The Administrator is responsible for establishing and maintaining the Agency's Safety, Health, and Environmental Management Program (SHEMP).

b. Assistant Administrator (AA), Office of Administration and Resources Management (OARM). The AA-OARM serves as EPA's Designated Agency Safety and Health Official with responsibility for establishing EPA's occupational safety and health policies and programs.

c. Director, SHEMD. The SHEMD Director is responsible for establishing policy and guidance for training and certification programs for Agency activities, approving safety and health training and certification programs for employees, and evaluating the results of these training and certification programs.

d. Assistant Administrators and Regional Administrators. These officials are responsible within their jurisdictions for implementing the provisions of this Order and for providing the necessary funds for employee training and certification.

e. Supervisors. Supervisors are responsible for complying with the requirements of this Order for employee training and certification. Supervisors will identify those employees who require job-specific safety and health training and certification in conjunction with the local SHEMP manager, will ensure they receive training in compliance with the provisions of this Order, and will ensure these requirements are properly contained in position descriptions and job postings.

f. Safety, Health and Environmental Management Program Officials (e.g., the local SHEMP Manager/Specialist). The SHEMP managers are responsible for identifying program areas that require training and certification and recommending or providing training and certification resources to meet the requirements of this Order. Additionally, SHEMP managers certify or attest on behalf of the Agency, that the employee has successfully completed the minimum classroom and hands-on training requirements specified for the needed training and maintain records of persons receiving training and certification.

g. Employees. Employees are responsible for knowing the extent of their individual occupational safety and health training. Employees should notify their supervisor of any hazardous work situation and make suggestions for corrective measures. Employees are responsible for applying the knowledge, skills, and techniques acquired through training in a manner that will help ensure their safety and health and that of fellow workers, and they must participate in safety and health training provided by the Agency.

8. **TRAINING AND CERTIFICATION REQUIREMENTS**

a. This Order establishes general orientation and job-specific safety and health training requirements for the following groups of EPA employees:

i. Management. Managers shall receive orientation to assist in managing the occupational safety and health programs of SHEMD.

ii. Supervisors. First-line supervisors shall receive introductory and specialized courses to recognize and eliminate occupational safety and health hazards in the workplace. The training shall cover procedures for reporting and investigating workplace hazards and motivating subordinates toward ensuring safe and healthful work practices.

iii. Safety, Health and Environmental Management Program Officials. SHEMP managers/specialists shall receive occupational safety and health training to understand the basic elements related to hazard recognition, hazard

evaluation and control, workplace inspection, equipment and facility design, and injury and illness data, as applicable to operations within their respective reporting units.

iv. Collateral Duty Safety and Health Personnel. Collateral duty safety and health employees (e.g., incident management team safety officers and other employees who perform this function as an additional duty) shall be provided training commensurate with their assigned duties and shall have an understanding of SHEMD's occupational safety and health program.

v. Employees and Employee Representatives. Employees shall be provided with general and job-specific safety and health training appropriate to the operational needs within the Agency and to the work they perform. Employee representatives (such as union officials, safety committee representatives and others) shall be provided training to assist in workplace inspections and gain an understanding of their basic duties as employee representatives.

b. General and job-specific training for EPA employees is defined as follows:

i. General Safety and Health Orientation Training. All employees shall be provided with core safety and health training at the time of employment during their orientation period. The training shall include, but not be limited to, subject areas identified in SHEM Guideline 51.

ii. Job-Specific Safety and Health Training. All employees shall be provided with additional job-specific safety and health training before the employee actually performs work. Job-specific training is described in SHEM Guideline 51, which provides methods and checklists to identify job- specific training needs.

Additional job-specific training needs may be identified in a JHA for an employee's position. Detailed information regarding JHAs is provided in SHEM Guideline 56.

Supervisors shall work collaboratively with safety and health officials to implement the training requirements in SHEM Guideline 51, the requirements of any associated JHA, and any regulatory requirements (e.g., hazardous waste operations and emergency response training required under 29 Code of Federal Regulations (CFR) 1910.120).

c. Job-specific safety and health training shall meet the following minimum requirements for field, laboratory and other specialized activities. (*Note:* The SHEMP manager may certify employees based on an evaluation of previous training, education and experience. Recommendations for this type of certification should be made to the SHEMP manager at the reporting unit.)

i. Field Activities. All employees that engage in field activities shall be provided a minimum of 24 hours of safety and health training prior to becoming

involved in normal, routine field activities. Eight hours of annual refresher training is also required. The 24-hour training shall include, but not be limited to, instruction in all of the following subject areas:

- Nature of anticipated hazards
- Emergency help and self-rescue (i.e., emergency planning in remote locations)
- Safe use of field equipment
- Use, handling, storage and transportation of hazardous materials Personal protective equipment/clothing, use and maintenance Safe sampling techniques
- First aid

Within six months of receiving instruction, the employee shall accompany another employee experienced in field activities and perform actual field tasks with supervision for a minimum of three days. Employees satisfactorily completing these requirements will be considered certified for field activities by the SHEMP manager at the reporting unit.

ii. Laboratory Activities. All employees that engage in laboratory activities shall be provided a minimum of 24 hours of safety and health training prior to becoming involved in normal, routine laboratory activities. Four hours of annual refresher training is also required. The 24-hour training shall include, but not be limited to, instruction in all of the following subject areas:

- Engineering controls, administrative/work practice controls, and personal protective equipment
- EPA Medical Surveillance Program
- Safety, health, and environmental management plans
- Signs and symptoms of chemical, physical, and biological exposures Locations and uses of emergency equipment
- Waste management program
- Labeling, storage, and handling of chemicals
- Chemical inventory and management program Material safety data sheets
- Emergency procedures
- Fire and life safety

Within six months of receiving instruction, the employee shall accompany another experienced employee and perform actual laboratory activities and tasks with supervision for a minimum of three days. Employees satisfactorily completing these requirements will be considered certified for laboratory activities by the SHEMP manager at the reporting unit.

iii. Other Specialized Activities. All EPA employees that supervise or participate in specialized or unique activities that are not covered elsewhere in this Order must be provided with safety and health training that is commensurate with anticipated hazards. Depending on specific duties or tasks, training requirements for employees engaged in these activities may involve up to 40 hours or more of training. The levels of training will be established by the SHEMP manager and employees' supervisors in accordance with SHEM Guidelines 51 and 56 and other applicable requirements. Examples of specialized activities where this may apply include, but are not limited to:

- Boating and marine operations EPA diving operations
- Trailer loading and towing
- Mobile equipment transportation, set-up and operation (e.g., command posts, mobile laboratories, etc.)
- Aerial operations, surveillance, and reconnaissance
- Off-road, self-propelled, all-terrain vehicle (ATV) operations Powered tool and equipment operations (e.g., table saw, portable drill, stationary drill press, welding equipment, etc.)
- Firearms and powder activated devices
- Facility operations, equipment, and maintenance Materials handling, storage, and transport
- Medical response operations (e.g., first aid, CPR, AED, EMT, oxygen administration, etc.)
- Regulated activities (e.g., hazardous waste operations and emergency response, use of respiratory protection equipment, lead or asbestos abatement, formaldehyde, ethylene oxide, arsenic, blood borne pathogens, chemical warfare agents, nanomaterials, construction areas, confined spaces, etc.)
- Commercial driving
- Other specialized or unique activities that are not covered elsewhere in this Order yet require additional safety and health training

Employees shall be provided with a combination of virtual, classroom, and hands-on training prior to becoming involved in specialized activities. Employees satisfactorily completing specific training requirements for other specialized activities shall be provided corresponding certifications from the SHEMP manager at the reporting unit.

9. **FREQUENCY OF TRAINING**

Safety and health training should begin at the time of employment or prior to assignment, before the employee actually begins performing particular job duties.

Employees engaged in field or laboratory activities shall complete a minimum of 24 hours respectively of initial safety and health training prior to assignment. Employees engaged in field activities shall complete a minimum of eight hours of refresher instruction annually. Employees engaged in laboratory activities shall complete a minimum of four hours of refresher instruction annually. Where this or additional requirements for refresher training have been identified, instruction shall include a review of all relevant subject areas in order to maintain certification. Training requirements are identified in SHEM Guideline 51, JHAs, EPA Orders, mandatory training requirements, regulatory requirements and other sources.

SHEMP managers, in coordination with supervisors, will determine if the employee's training is consistent with the requirements of this Order. For example, in cases where employees have lapsed certifications or resume certain activities after an extended time gap, the SHEMP manager will determine if initial or refresher training must be completed.

10. **RECORD OF TRAINING**

a. A record of the training and certification shall be maintained by the appropriate local and/or programmatic health and safety official. Records, at a minimum, shall identify the trainee by name, the training topic and course title, the training date, and the name of the training source, where applicable.

b. The SHEMP manager shall maintain a recordkeeping system to document the training topics and certification levels for each employee at the reporting unit.

c. The SHEMP manager shall monitor training and certification records to establish schedules for appropriate refresher training.

d. The SHEMP manager shall ensure employees and supervisors have access to their safety and health training and certification records.

e. Nationally consistent titles for training topics and certifications as established in EPA SHEM Guideline 51 shall be used to record and communicate the receipt of training.

11. **AUTHORITIES**

a. Occupational Safety and Health Act of 1970

b. Executive Order 12196, *Occupational Health and Safety Programs for Federal Employees*

c. 29 CFR Part 1910, O*ccupational Safety and Health Standards*

d. 29 CFR Part 1960, *Basic Program Elements for Federal Employees*

e. 40 CFR Part 311, *Worker Protection*

f. EPA Order 1440.1, *Safety, Health and Environmental Management*

g. EPA Order 1440.3, *Respiratory Protection*

h. EPA Order 1000.18, *Transportation of Hazardous Materials*

i. EPA Order 1440.5A, *Qualifications and Training Requirement for Occupational Health and Safety Program Personnel*

j. EPA Order 1440.7, *Hazard Communications*

k. EPA Order 1460.1, *Occupational Medical Surveillance Program*

l. EPA Order 2072, Response Support Corps

m. EPA Order 3500.1 A1, *Training and Development for Compliance Inspectors/Field Investigators*

n. 29 CFR Part 1926, *Safety and Health Standards for Construction*

o. Government Employees Training Act of 1958, as amended in 1994

p. Title 5 of the United States Code 4101, et seq.

q. 5 CFR Part 410, Training

r. Other federal, state, and local code training requirements as applicable

12. **REFERENCES**

SHEMD Intranet site

SHEM Guideline 38: Radiation Safety and Health Protection Program

SHEM Guideline 50: Federal Employee Occupational Health and Safety Program

SHEM Guideline 51: Mandatory Health and Safety Training

SHEM Guideline 56: Job Hazard Analysis

Office of Solid Waste and Emergency Response Directive 9285.3-12, Emergency Responder Health and Safety Manual

13. **PERIODIC REVIEW**

SHEMD will periodically review EPA Order 1440.2 to ensure its continued effectiveness and adherence with applicable rules and regulations.

This Order supersedes Order 1440.2, which was approved on July 12, 1981.

# Appendix D –
# EPA's Memorandum on Practices to Follow and Avoid when Requesting Information

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

APR 18 2002

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

**MEMORANDUM**

**SUBJECT:** Practices to Follow and Avoid When Conducting Compliance Inspections: ***Requesting Information***

**FROM:** Michael S. Alushin, Director M.S. Alushin
Compliance Assessment and Media Programs Division

**TO:** Addressees

This memorandum transmits a list of practices which are recommended to be followed and avoided when requesting information during compliance inspections. This list was prepared in consultation with staff from the Office of Regulatory Enforcement to address concerns expressed by Congress with regard to overly burdensome requests for information by EPA compliance inspectors. It is recommended that all EPA compliance inspectors follow or avoid these practices, as appropriate. Please distribute this list to the inspectors in your respective organization.

Thank you for your attention. We hope this guidance improves the understanding of procedures to follow when requesting any information while conducting compliance inspections. We encourage all EPA Compliance Inspectors to follow these good practices.

If you have any questions, please contact Julie Tankersley at (202) 564-7002, or email at tankersley.julie@epa.gov. This list of good practices will also be posted on the EPA Inspector website at http://intranet.epa.gov/oeca/oc/metd/inspector/.

Attachment

List of Addressees:

Regional Enforcement Division Directors, Regions 1-10
Regional Media Division Directors, Regions 1-10
Regional Science and Technology Division Directors, Regions 1-10
Regional Enforcement Coordinators, Regions 1-10
Michael Stahl, Director, Office of Compliance
Lisa Lund, Acting Deputy Director, Office of Compliance
OC Division Directors
Connie Musgrove, Acting Director, Office of Regulatory Enforcement
George Lawrence, Acting Deputy Director, Office of Regulatory Enforcement
ORE Division Directors
Leo D'Amico, Director, Office of Criminal Enforcement, Forensics & Training
OCEFT Division Directors
Mary Kay Lynch, Director, Office of Planning, Policy Analysis, & Communications
Diana Love, Director, National Enforcement Investigations Center
David Lopez, Director, Oil Program Center
Gary Jonesi

**Privileged – For internal use only – Do not release under FOIA**

## Practices to Follow and Avoid When Conducting Compliance Inspections

January 22, 2002

**Purpose of Document**

A number of recent Congressional inquiries into the EPA's authority to request information to determine compliance prompted OECA to develop the following "Practices To Follow and Avoid When Conducting Compliance Inspections".

The Practices are designed to comply with legal and policy guidance. First, they ask that a case file be opened prior to conducting an inspection, which should include any research on potential violations at the facility. Second, they minimize the possibility inspectors will request information **not** considered part of a routine compliance inspection. Inspectors should **not** request information that should be collected under a formal information request using the authorities in each of the environmental statutes (i.e., CAA Section114, RCRA Section 3007, CWA Section 308, TSCA Section 11, FIFRA Sections 8 and 9, SDWA Section 3001, OPA Section 311, CERCLA Section 104 ). These information requests are formal documents that can result in the commencement of an enforcement action by EPA pursuant to the enforcement sections of the statute.

**OECA expects EPA inspectors to follow the good practices and those to avoid listed below.**

**Good Practices to Follow When Conducting Compliance Inspections**

- Conduct research on the potential for violations before conducting inspections
- Open an individual enforcement case file (a physical or electronic file with the facility name, location, previous inspections, etc.) prior to conducting inspections
- Use inspection checklists only as a guide. Don't follow the checklist blindly. Tailor your questions to the individual facility. It is generally not required to ask every question on the checklist at every facility.
- Use of an inspection checklist should be used for the purpose of determining compliance or supporting an active or planned enforcement action.
- Additional questions asked of facility personnel should be related to the direct observations noted during the field portion of the inspection or based on prior research.
- Basic questions such as number of employees, engineering drawings, hours of operation are allowed to be asked even if they are not specifically "required by regulations"

**Practices to Avoid When Conducting Inspections**

- X Avoid asking questions as a general survey of the facility or class of facilities
- X Avoid asking questions which are unrelated to the purpose of the site visit
- X Avoid asking for information from the facility during the inspection that is onerous and may take more than a few days to provide.
- X Avoid asking questions that are typically included in a statutory "information request" (e.g., CAA 114 requests or RCRA 3007 request)

# Appendix E –
# Sample CWA Section 308 Information Collection Request Letter (308 Letter)

**CERTIFIED MAIL–RETURN RECEIPT REQUESTED**

Date

Name
Address

Dear Name:

Enclosed is an Information Request (Request) issued to (company name), pursuant to Section 308(a) of the Clean Water Act, 33 U.S.C. Part 1318(a), which authorizes the U.S. Environmental Protection Agency (EPA) to request information required to carry-out the objectives of the CWA. The Request relates to waterbodies in your vicinity that are impaired by pollutants frequently associated with discharges from animal feeding operations. EPA needs to ensure that your facility is operating properly to protect water quality. Only one response is required from (company name) and your response to the Request must be post-marked no later than thirty (30) days from your receipt of this letter.

Please be advised that failure to respond to the Request within the thirty (30)-day period or provide full, complete, true and correct responses, may result in additional action requiring you to properly respond to the Request.

EPA urges you to give this matter your immediate attention and respond to this Request in a timely manner. Your response must be signed by an authorized official and should be mailed to (appropriate designated official) at the address above.

If you have any questions regarding this Request, you may contact (appropriate designated official).

Sincerely,

Director
Compliance Assurance and
Enforcement Division

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**
**Article Number: (#)**

(Contact Name)
(Company)
(Address)

Re: **Request for Information Pursuant to Section 308 of the Clean Water Act**
**CWA-IR-15-025**
**(Company Name)**
**EPA ICIS NPDES Tracking No. (#)**
**(state)PDES General Permit No. (#)**

Dear (contact name):
Section 308(a) of the Clean Water Act ("CWA"), 33 U.S.C. Part 1318(a), provides that whenever it is necessary to carry out the objectives of the CWA, including determining whether or not a person/agency is in violation of Section 301 of the CWA, 33 U.S.C. Part 1311, the United States Environmental Protection Agency ("EPA") shall require the submission of any information reasonably necessary to make such a determination. Under the authority of Section 308 of the CWA, EPA may require the submission of information necessary to assess the compliance status of any facility and its related appurtenances.

(Company name) obtained coverage under the (appropriate state program) Construction Activity Storm Water General Permit ("Construction General Permit" or "CGP"), (state program) Permit No., on or about (date) for the site. The CGP regulates storm water discharges to surface waters from construction activities, including clearing, grading and excavation, which disturb one (1) acre or more of land. The effective CGPs for the past 5 years were the February 28, 2007 renewal, with a minor modification on August 17, 2009 ("2009 CGP") and the current March 1, 2012 renewal ("2012 CGP").

On (date), representatives of the EPA conducted a Reconnaissance Inspection ("RI" or "Inspection") of the (site name) and identified violations of the CGP, as detailed in the attached RI report.

A. Pursuant to Section 308 of the Clean Water Act, (company name) shall submit, for the (site name), to EPA Region (#) the following:

1. within **thirty (30) calendar days** of the date of receipt of this Request for Information, submit in writing, the actions (including schedules) that the facility has taken to address the Potential Noncompliance Items in the RI report.

2. within **forty-five (45) calendar days** of the date of receipt of this Request for Information:

    a. the Storm Water Pollution Prevention Plan(s) ("SPPP") that were in place for the period January 2011 to Present as required by Part E.1 and Attachment B of the CGP (which includes both the Erosion and Sediment Control component and the Construction Site Waste Control component);

    b. weekly routine inspection reports required by Part I.E.3 of the CGP for the period January 2011 to the present;

    c. for the period January 2011 to the Present, as applicable, submit, all Annual Reports required by

Part I.E.4 of the 2009 CGP through February 28, 2012 and Reports of Noncompliance required by Part I.E.4 of the 2012 CGP and I.E.5 of the 2009 CGP;

d. for the period January 2011 to present, if (company name) does not have any of the information required above, then identify the dates of the unavailable reports and identify why such reports were not completed;

e. the date when excavation and construction activity began at the (site name);

f. the date when excavation and construction activity will be, or is expected to be, completed at the (site name); and

g. a report containing the costs associated with storm water management controls including labor, operations and maintenance, installation, etc. which were required to achieve compliance for the period June 11, 2015 to present. These costs should include:
   i. updating the SPPP as site conditions require;
   ii. fully implementing the SPPP; and
   iii. installation of stormwater best management practices

B. Within **ninety (90) calendar days** of the date of receipt of this Request for Information submit a complete listing and required information for all sites one (1) acre or greater, owned or operated by (company name), parent companies and/or subsidiaries, or any other entity under the general management of (company name) that are either under construction, have not undergone final stabilization, or that are under contract for construction. The response list and information must include:

   a. the site name, street/location, city, and zip code (including Latitude and Longitude information);

   b. the area of the site (in acres);

   c. the number of disturbed acres (or acres that will be disturbed);

   d. a copy of the approved Request for Authorization;

   e. a copy of the Letter of Acknowledgement or Authorization to Discharge, if applicable;

   f. the name(s), address, telephone number and contact person name for each of the operators or owners of the construction site including a list of subcontractors at each site who are responsible for clearing grading and/or excavating;

   g. the date that the construction began or is scheduled to begin and the date that construction is expected to be completed;

   h. the name of the receiving body or bodies of water for the storm water discharges;

   i. the Storm Water Pollution Prevention Plan(s) (“SPPP”) that were in place for the period January 2012 to the present as required by Part E.1 and Attachment B of the CGP, which includes both the Erosion and Sediment Control component and the Construction Site Waste Control component;

   j. weekly routine inspection reports required by Part I.E.3 of the CGP for the period January 2012 to the present; and

k. for the period January 2012 to the present, the Reports of Noncompliance required by Part I.E.4 of the 2012 CGP and I.E.5 of the 2009 CGP.

**CERTIFICATION**

Any documents to be submitted by (company name) shall be sent by certified mail or its equivalent and shall be signed by an authorized representative of the respective entity (see 40 CFR Part 122.22), and shall include the following certification:

> "I 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 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, 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."

All information required to be submitted pursuant to this Request for Information shall be sent by certified mail or its equivalent to the following addresses:

**Chief, Water Compliance Branch**
**Division of Enforcement and Compliance Assistance**
**U.S. Environmental Protection Agency - Region (#)**
**(address)**

**(name), Administrator**
**Water and Land Use Enforcement**
**(state department)**
**(address)**

For further information on EPA's Storm Water Program such as Best Management Practices and Storm Water Controls see EPA's web site at: **http://cicacenter.org/bmps.html**
**(appropriate state website)**

If you have any questions regarding this Request for Information, please contact (appropriate designated official).

Sincerely,

Chief
Water Compliance Branch

Enclosures

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**
**Article Number: (#)**

**(Name)**
**Assistant Commissioner**
**Bureau of Water and Sewer Operations**
**New York City Department of Environmental Protection**
**96-05 Horace Harding Expressway, 2nd Floor**
**Corona, New York 11368**

**Re: Request for Information Pursuant to Section 308 of the Clean Water Act**
**(33 U.S.C. Part 1318)**
**Docket No. (#)**
**SDPES Permit Nos. (#)**

Dear (name):

This letter concerns discharges of pollutants into waters of the United States from facilities associated with the New York City Department of Environmental Protection ("NYCDEP").

Section 301 of the Federal Clean Water Act ("CWA"), 33 U.S.C. Part 1251, *et seq.*, prohibits the discharge of pollutants into waters of the United States except as authorized by a permit issued pursuant to Section 402 of the CWA, 33 U.S.C. Part 1342. Each discharge of pollutants from a point source that is not authorized by such a permit constitutes a violation of Section 301(a) of the CWA, 33 U.S.C. Part 1311(a).

This letter and the enclosures are a request for information issued pursuant to Section 308(a) of the CWA, 33 U.S.C. 1318(a). Section 308 of the CWA authorizes the Administrator of Environmental Protection Agency ("EPA") to require those subject to the CWA to furnish information, conduct monitoring, provide entry to the Administrator or authorized representatives and make reports as may be necessary to carry out the objectives of the CWA. The enclosures, which are hereby made part of this letter, details the information NYCDEP must provide to EPA relating to its wastewater collection system and its treatment plants.

Section 308(a) of the CWA, 33 U.S.C. Part 1318(a) authorizes EPA to require any person to provide information required to carry out the objectives of the CWA including to determine whether there has been a violation of the CWA. Accordingly, you are requested to respond to the enclosed Information Request (Enclosure 1). Please read the instructions and definitions in the enclosure carefully before preparing your response. Answer each question as clearly and completely as possible. To the extent that NYCDEP has any of the requested data currently on file, that data may be submitted in the requested format as part of your response. Your response to this request must be accompanied by a certificate that is signed and dated by you or the person who is authorized by you to respond to the request. The certification must state that the response is complete and contains all information and documentation available to you pursuant to the request. A Statement of Certification is enclosed with this letter (Enclosure 2).

**Please submit your written responses in accordance with the deadlines set forth in the request to:**

**(Name), Chief**
**Municipal Enforcement Branch**
**Office of Civil Enforcement**
**U.S. Environmental Protection Agency**
**1200 Pennsylvania Avenue NW (Room 3111B)**
**Washington, DC 20460**
**Email:**
**Telephone:**
**Fax:**

**(Name), Chief**
**Water Compliance Branch**
**Division of Enforcement and Compliance Assistance**
**290 Broadway, 20th Floor**
**New York, NY 10007**
**Email:**
**Telephone:**
**Fax:**

Although the information requested must be submitted to EPA, you are entitled to assert a business confidentiality claim pursuant to the regulations set forth in 40 CFR Part 2, Subpart B. If EPA determines the information you have designated meets the criteria in 40 CFR Part 2.208, the information will be disclosed only to the extent and by means of the procedures specified in Subpart B. Unless a confidentiality claim is asserted at the time the requested information is submitted, EPA may make the information available to the public without further notice to you.

Compliance with the provisions of this letter is mandatory. If you do not respond fully and truthfully to this Information Request or adequately justify your failure to do so, you may be subject to civil penalties or criminal fines under Section 309 of the CWA, 33 U.S.C. Part 1319, under which injunctive relief and penalties may be sought. Such an enforcement action may include the assessment of penalties of up to $37,500 per violation, for each day of continued non-compliance.

We appreciate your cooperation and prompt attention to this matter. If you or your staff would like an opportunity to confer, have any questions, or would like to schedule a meeting relating to this information request, please contact (appropriate designated official). Thank you for your cooperation in this matter.

Sincerely,

Chief
Water Compliance Branch
USEPA Region 2

Enclosures
(1) Information Request
(2) Statement of Certification

# Appendix F –
# Final Fact Sheet: The Do's and Don'ts of Using U.S. EPA Credentials

**DATED: JUNE 1, 2000; SIGNED: MICHAEL STAHL**

**MEMORANDUM**

SUBJECT: Final Fact Sheet:
The United States Environmental Protection Agency Credentials Fact Sheet

FROM: Michael Stahl, Acting Directors/ **MICHAEL STAHL**
Office of Compliance

TO: See Attached List

**Purpose** The purpose of this memo is to transmit the final fact sheet on the United States Environmental Protection Agency (U.S. EPA) credentials. The fact sheet does not change existing EPA policies on credentials. The fact sheet is designed to inform EPA managers, supervisors, and employees of the overall process regarding U.S. EPA credentials. The fact sheet pertains only to EPA employees. The fact sheet contains information on the definition, policy, authority, language, issuing procedures, accountability, renewal, potential penalties for improper use, and specific do's and don'ts.

**Process** A draft fact sheet was transmitted for your review on April 14, 2000. The Office of Compliance (OC) received comments on the draft fact sheet from Regions 2, 3, 4, 6, 7 and 8, and from the Office of General Counsel (OGC), the Office of Environmental Justice (OEJ), the Office of Regulatory Enforcement (ORE), and the Office of Administration and Resource Management (OARM). The fact sheet was revised based on the comments.

**Request** Please distribute a copy of the fact sheet to all EPA employees holding EPA credentials. The fact sheet will also be posted on the OC Compliance Inspector Web Site. (http://intranet.epa.gov/oeca/oc/metd/inspector)

**Future Procedure** OARM will include a copy of the fact sheet with the credentials when they are renewed every three (3 years).

Thank you for your attention to this request.

**Addressees:**

Eric Schaeffer, Director, ORE
Leo D'Amico, Director, OCEFT
Barry Breen, Director, OSRE
James C. Nelson, Associate General Counsel, Cross-Cutting Issues Law Office
Barry Hill, Director, Office of Environmental Justice
John Fogarty, Acting Director, Office of Planning and Policy Analysis
Craig Hooks, Director, Federal Facilities Enforcement Office
Rich Lemley, Director, Facilities Management and Services Division
Steve Zeigler, Chief, Security and Property Management Branch
Regional Enforcement Division Directors, Regions I-X
Regional Science and Technology Division Directors, Regions I-X
Regional Enforcement Coordinators, Regions I-X
Regional Security Managers, Regions I-X
ORE Division Directors
OC Division Directors
OSRE Division Directors
Louis Halkias, Acting Director, Criminal Investigations Division
Jonathan Cole, Director, Legal Counsel and Resource Management Division
Diana A. Love, Director, NEIC
Gerald Bryan, Director, NETI
Yvette Jackson, OARM
Ken Gigliello, OC

## The Do's and Don'ts of Using U.S. EPA Credentials

These do's and don'ts are established based on good management practices for ensuring the proper use of EPA credentials by *EPA employees*. The practical purpose of the do's and don'ts is to make EPA employees aware of the importance to safeguard credentials, and limit their use to ONLY enforcement functions.

| DO'S | DON'TS |
|---|---|
| Do use for official duties described in the credentials | Do NOT use for non-enforcement government business |
| Do use to conduct compliance inspections | Do NOT allow anyone to hold or take possession of your credentials |
| Do use to conduct compliance investigations | Do NOT loan the credentials to anyone. This includes other EPA employees. |
| Do use when responding to environmental complaints and/or spills | Do NOT photocopy the credentials |
| Do use to conduct facility audits | Do NOT fail to report a lost or stolen credentials to your supervisor |
| Do use to verify status as an EPA official when interviewing witnesses in the field | Do NOT allow anyone else to photocopy or use the credentials |
| Do use as identification for entry into facilities regulated under federal environmental laws and regulations | |
| Do safeguard storage of credentials | |
| Do always immediately report if the EPA credentials is lost or stolen to your immediate supervisor | |

# FACT SHEET ON CREDENTIALS ISSUED TO EPA EMPLOYEES DO'S AND DON'TS

5/23/00

***Source:*** *EPA Security Manual, Physical Security Section, Volume 4850-1, dated 7/16/84*

## DEFINITION

The 1984 Security Manual defines an EPA credential as: "An EPA credential is a pocket warrant authorized by the Administrator, Assistant Administrator, or Regional Administrator that identifies the bearer as having the authority to act in an enforcement, inspection, survey, or investigation capacity." However, the EPA's legal authority to perform the enforcement, inspection, survey, or investigation functions is based on the applicable federal environmental statutes passed by the United States Congress and signed by the President of the United States. **The credential evidences the proper delegation of this authority and does not provide independently the authority to undertake these activities.**

## POLICY

EPA credentials should be issued only to those officers and employees who routinely need them to actively perform official enforcement, inspection, survey or investigative functions. EPA credentials generally are not issued to non-EPA employees, but in certain situations may be issued to State or tribal personnel, contractors, or grantees. In the event that non-EPA employees are authorized by the Administrator, Regional Administrator, or Assistant Administrator to possess EPA credentials, the credentials will be issued by the Regional Office, Lab, or other organization which has responsibility for overseeing the duties of the credentialed non-EPA employee.

## LANGUAGE

The language on the EPA credential states:

**United States of America Environmental Protection Agency**
**This is to Certify that (EPA Employee's Name)**
**Whose Signature and Photograph Appear Below is a Duly Commissioned**
**(blank space for insertion of title)**

**Each credential includes ONE of the following titles:**
Inspector, Compliance Officer, Enforcement Officer,
On-Scene Coordinator, Remedial Project Manager,
Debarment Counselor or Law Judge

*Authorized to Conduct Official Investigations and*
*Inspections Pursuant to All Federal Laws*
*Administered by the United States*
*Environmental Protection Agency*

**ISSUANCE**

The requesting Headquarters program, media office, Regional office or Lab, should transmit a brief memorandum of justification to the Headquarters Office of Administration and Resources Management (OARM) requesting credentials to be issued to specific EPA employees. The memo should include the names, titles, organization, official duties, date of request, and the signature of requesting official. The requesting party is responsible for ensuring that the bearer has met applicable training requirements (e.g., EPA Order 3500.1). OARM (Security Management) will issue the federal credentials to the named employees after review of the information.

**ACCOUNTABILITY**

Since credentials are issued only to assist the bearer in the performance of official duties, the credentials should be returned to OARM when the bearer leaves the position requiring the EPA credentials. The employee's office should send OARM a brief note explaining the reason the credentials are being returned (e.g., retirement, employee reassigned to a position not requiring a credential)

If the EPA credentials are lost or stolen, the bearer should promptly notify his or her immediate supervisor, in writing, and a copy should be sent to OARM. A brief report of the circumstances surrounding the loss or theft should be forwarded to the Security Management Staff along with the new request. If a new set of credentials is required, the above procedures will be followed. **Failure to promptly notify the supervisor of a lost or stolen credential could result in disciplinary action against the bearer.**

**RENEWAL**

EPA credentials will be renewed every three (3) years by OARM. The Security Management Official will transmit a list of Regional employees whose credentials will expire to the Security Representative in each Region for review. The Security representative is responsible for

ensuring that all listed personnel still have a need for the credential and applicable training is up-to-date. Once the list has been updated and returned to the HQ Security Management Official, OARM will renew the Regional credentials. All credentials are reissued on a rolling monthly basis to each Region (e.g., January for Region I, February for Region II, etc.)

Each Headquarters Office will receive a listing of employees whose credentials will expire. The Office Director is responsible for ensuring that all listed personnel still have a need for the credential and applicable training is up-to-date. OARM will renew these credentials on a first-come, first-served basis. All Headquarters credentials expire in December of the calendar year.

# Appendix G –
# EPA's Memorandum On Entry Procedures

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

MEMORANDUM

OFFICE OF ENFORCEMENT

TO: Regional Administrators
Surveillance and Analysis Division Directors
Enforcement Division Directors

FROM: Assistant Administrator for Enforcement

SUBJECT: Conduct of Inspections After the Barlow's Decision

## I. Summary

This document is intended to provide guidance to the Regions in the conduct of inspections in light of the recent Supreme Court decision in Marshall v. Barlow's, Inc., U.S., 98 S. Ct. 1816 (1978). The decision bears upon the need to obtain warrants or other process for inspections pursuant to EPA-administered Acts.

In Barlow's, the Supreme Court held that an OSHA inspector was not entitled to enter the non-public portions of a work site without either (1) the owner's consent, or (2) a warrant. The decision protects the owner against any penalty or other punishment for insisting upon a warrant.

In summary, Barlow's should only have a limited effect on EPA enforcement inspections:

- Inspections will generally continue as usual;
- Where an inspector is refused entry, EPA will seek a warrant through the U.S. Attorney;
- Sanctions will not be imposed upon owners of establishments who insist on a warrant before allowing inspections of the non-public portions of an establishment.

The scope of the Barlow's decision is broad. It affects all current inspection programs of EPA, including inspections conducted by State personnel and by contractors. The Agency's procedures for inspections, particularly where entry is denied, were largely in accord with the provisions of Barlow's before the Supreme Court issued its ruling. Nevertheless, a number of changes in Agency procedure are warranted. Thus, it is important that all personnel involved in the inspection process be familiar with the procedural guidelines contained in this document.

This document focuses on the preparation for and conduct of inspections, including (1) how to proceed when entry is denied, (2) under what circumstances a warrant is necessary, and (3) what showing is necessary to obtain a warrant.

# II. Conduct of Inspections

The following material examines the procedural aspects of conducting inspections under EPA-administered Acts. Inspections are considered in three stages: (1) preparation for inspection of premises, (2) entry onto premises, and (3) procedures to be followed where entry is refused.

## A. Preparation

Adequate preparation should include consideration of the following factors concerning the general nature of warrants and the role of personnel conducting inspections.

### (1) Seeking a Warrant Before Inspection

The Barlow's decision recognized that, on occasion, the Agency may wish to obtain a warrant to conduct an inspection even before there has been any refusal to allow entry. Such a warrant may be necessary when surprise is particularly crucial to the inspection, or when a company's prior bad conduct and prior refusals make it likely that warrantless entry will be refused. Pre-inspection warrants may also be obtained where the distance to a U.S. Attorney or a magistrate is considerable so that excessive travel time would not be wasted if entry were denied. At present, the seeking of such a warrant prior to an initial inspection should be an exceptional circumstance, and should be cleared through Headquarters. If refusals to allow entry without a warrant increase, such warrants may be sought more frequently. (For specific instructions on how to obtain a warrant, see Part D.)

### (2) Administrative Inspections v. Criminal Investigations

It is particularly important for both inspectors and attorneys to be aware of the extent to which evidence sought in a civil inspection can be used in a criminal matter, and to know when it is necessary to secure a criminal rather than a civil search warrant. There are three basic rules to remember in this regard: (1) If the purpose of the inspection is to discover and correct, through civil procedures, noncompliance with regulatory requirements, and administrative inspection (civil) warrant may be used; (2) if the inspection is in fact intended , in whole or in part, to gather evidence for a possible criminal prosecution, a criminal search warrant must be obtained under Rule 41 of the Federal Rules of Criminal Procedure; and (3) evidence obtained during a valid civil inspection is generally admissible in criminal proceedings. These principles arise from the recent Supreme Court cases of Marshall v. Barlow's, Inc., supra; Michigan v. Tyler, U.S. 98 S.Ct. 1942 (1978); and U.S. v. LaSalle National Bank, U.S., 57 L. Ed: 2d 221 (1978). It is not completely clear whether a combined investigation for civil and criminal violations may be properly conducted under civil or "administrative" warrant, but we believe a civil warrant can properly be used unless the intention is clearly to conduct a criminal investigation.

### (3) The Use of Contractors to Conduct Inspections

Several programs utilize private contractors to aid in the conduct of inspections. Since, for the purpose of inspections, these contractors are agents of the Federal government, the restrictions of the Barlow's decision also apply to them. If contractors are to be conducting inspections without the presence of actual EPA inspectors, these contractors should be given training in how to conduct themselves when entry is refused. With respect to obtaining or

executing a warrant, an EPA inspector should always participate in the process, even if he was not at the inspection where entry was refused.

**(4) Inspections Conducted by State Personnel**

The Barlow's holding applies to inspections conducted by State personnel and to joint Federal/State inspections. Because some EPA programs are largely implemented through the States, it is essential that the Regions assure that State-conducted inspections are conducted in compliance with the Barlow's decision, and encourage the State inspectors to consult with their legal advisors when there is a refusal to allow entry for inspection purposes. State personnel should be encouraged to contact the EPA Regional Enforcement Office when any questions concerning compliance with Barlow's arise.

With regard to specific procedures for States to follow, the important points to remember are: (1) The State should not seek forcible entry without a warrant or penalize an owner for insisting upon a warrant, and (2) the State legal system should provide a mechanism for issuance of civil administrative inspection warrants. If a State is enforcing an EPA program through a State statute, the warrant process should be conducted through the State judicial system. Where a State inspector is acting as a contractor to the Agency, any refusal to allow entry should be handled as would a refusal to an Agency inspector as described in section II.B.3. Where a State inspector is acting as a State employee with both Federal and State credentials, he would utilize State procedures unless the Federal warrant procedures are more advantageous, in which case, the warrant should be sought under the general procedures described below. The Regions should also assure that all States which enforce EPA programs report any denials of entry to the appropriate Headquarters Enforcement Attorney for the reasons discussed in section II.B.4.

**B. Entry**

**(1) Consensual Entry**

One of the assumptions underlying the Court's decision is that most inspections will be consensual and that the administrative inspection framework will thus not be severely disrupted. Consequently, inspections will normally continue as before the Barlow's decision was issued. This means that the inspector will not normally secure a warrant before undertaking an inspection but, in an attempt to gain admittance, will present his credentials and issue a notice of inspection where required. The establishment owner may complain about allowing an inspector to enter or otherwise express his displeasure with EPA or the Federal government. However, as long as he allows the inspector to enter, the entry is voluntary and consensual unless the inspector is expressly told to leave the premises. On the other hand, if the inspector has gained entry in a coercive manner (either in a verbal or physical sense), the entry would not be consensual.

Consent must be given by the owner of the premises or the person in charge of the premises at the time of the inspection. In the absence of the owner, the inspector should make a good faith effort to determine who is in charge of the establishment and present his credentials to that person. Consent is generally needed only to inspect the non-public portions of an establishment i.e., any evidence that an inspector obtains while in an area open to the public is admissible in an enforcement proceeding.

### (2) Withdrawal of Consent

The owner may withdraw his consent to the inspector at any time. The inspection is valid to the extent to which it has progressed before consent was withdrawn. Thus, observations by the inspector, including samples and photographs, obtained before consent was withdrawn, would be admissible in any subsequent enforcement action. Withdrawal of consent is tantamount to a refusal to allow entry and should be treated as discussed in section II.B.3. below, unless the inspection had progressed far enough to accomplish its purposes.

### (3) When Entry is Refused

Barlow's clearly establishes that the owner does have the right to ask for a warrant under normal circumstances.[24] Therefore, refusal to allow entry for inspection purposes will not lead to civil or criminal penalties if the refusal is based on the inspector's lack of warrant and one of the exemptions discussed in Part C does not apply. If the owner were to allow the inspector to enter his establishment only in response to a threat of enforcement liability, it is quite possible that any evidence obtained in such an inspection would be inadmissible. An inspector may, however, inform the owner who refused entry that he intends to seek a warrant to compel the inspection. In any event, when entry is refused, the inspector should leave the premises immediately and telephone the designated Regional Enforcement Attorney as soon as possible for further instructions. The Regional Enforcement Attorney should contact the U.S. Attorney's Office for the district in which the establishment desired to be inspected is located and explain to the appropriate Assistant United States Attorney the need for a warrant to conduct the particular inspection. The Regional Attorney should arrange for the United States Attorney to meet with the inspector as soon as possible. The inspector should bring a copy of the appropriate draft warrant and affidavits. Samples are provided in the appendix to this document.

### (4) Headquarters Notification

It is essential that the Regions keep Headquarters informed of all refusals to allow entry. The Regional Attorney should inform the appropriate Headquarters Enforcement Attorney of any refusals to enter and should send a copy of all papers filed to Headquarters. It is necessary for Headquarters to monitor refusals and Regional success in obtaining warrants to evaluate the need for improved procedures and to assess the impact of Barlow's on our compliance monitoring progress.

## C. Areas Where a Right of Warrantless Entry Still Exists

### (1) Emergency Situations

In an emergency, where there is no time to get a warrant, a warrantless inspection is permissible. In Camara v. Municipal Court, 387 U.S. 523 (1967), the Supreme Court states that "nothing we say today is intended to foreclose prompt inspections, even without a warrant, that the law has traditionally upheld in emergency situations." Nothing stated in Barlow's indicates any intention by the court to retreat from this position. The Regions will always have

[24] FIFRA inspections are arguably not subject to this aspect of Barlow's. See discussion, p. 5 and 6.

to exercise considerable judgement concerning whether to secure a warrant when dealing with an emergency situation. However, if entry is refused during and emergency, the Agency would need the assistance of the U.S. Marshal to gain entry, and a warrant could probably be obtained during the time necessary to secure that Marshal's assistance.

An emergency situation would include potential imminent hazard situations, as well as situations where there is potential for destruction of evidence or where evidence of a suspected violation may disappear during the time that a warrant is being obtained.

**(2) FIFRA Inspection**

There are some grounds for interpreting Barlow's as not being applicable to FIFRA inspections. The Barlow's restrictions do not apply to areas that have been subject to a long standing and pervasive history of government regulation. An Agency administrative law judge held recently that even after the Barlow's decision, refusal to allow a warrantless inspection of a FIFRA regulated establishment properly subjected the owner to civil penalty. N. Jones & Co., Inc., I.F. & R Docket No. III-121C (July 27, 1978). For the present, however, FIFRA inspections should be conducted under the same requirements applicable to other enforcement programs.

**(3) "Open Fields" and "In Plain View" Situations**

Observation by inspectors of things that are in plain view, (i.e., of things that a member of the public could be in a position to observe) does not required a warrant. Thus, an inspector's observations from the public area of a plant or even from certain private property not closed to the public are admissible. Observations made even before presentation of credentials while on private property which is not normally closed to the public are admissible.

**D. Securing a Warrant**

There are several general rules for securing warrants. Three documents have to be drafted: (a) an application for a warrant, (b) an accompanying affidavit, and (c) the warrant itself. Each document should be captioned with the District Court of jurisdiction, the title of the action, and the title of the particular document.

The application for a warrant should generally identify the statutes and regulations under which the Agency is seeking the warrant, and should clearly identify the site or establishment desired to be inspected (including, if possible, the owner and/or operator of the site). The application can be a one or two-page document if all of the factual background for seeking the warrant is stated in the affidavit, and the application so states. The application should be signed by the U.S. Attorney or by his Assistant U.S. Attorney.

The affidavits in support of the warrant application are crucial documents. Each affidavit should consist of consecutively numbered paragraphs, which describe all of the facts that support warrant issuance. If the warrant is sought in the absence of probable cause, it should recite or incorporate the neutral administrative scheme which is the basis for inspecting the particular establishment. Each affidavit should be signed by someone with personal knowledge of all the facts stated. In cases where entry has been denied, this person would most likely be the

inspector who was denied entry. Note that an affidavit is a sworn statement that must either be notarized or personally sworn to before the magistrate.

The warrant is a direction to an appropriate official (an EPA inspector, U.S. Marshal or other Federal officer) to enter a specifically described location and perform specifically described inspection functions. Since the inspection is limited by the terms of the warrant, it is important to specify to the broadest extent possible the areas that are intended to be inspected, any records to be inspected, any samples to be taken, and any articles to be seized, etc. While a broad warrant may be permissible in civil administrative inspections, a vague or overly broad warrant will probably not be signed by the magistrate and may prove susceptible to constitutional challenge. The draft warrant should be ready for the magistrate's signature at the time of submission via a motion to quash and suppress evidence in Federal District court. Once the magistrate signs the draft warrant, it is an enforceable document. Either following the magistrate's signature or on a separate page, the draft warrant should contain a "return of service" or "certificate of service". This portion of the warrant should indicate upon whom the warrant was personally served and should be signed and dated by the inspector. As they are developed, more specific warrant issuance documents will be drafted and submitted to the Regions.

### E. Standards or Bases for the Issuance of Administrative Warrants

The Barlow's decision establishes three standards or bases for the issuance of administrative warrants. Accordingly, warrants may be obtained upon a showing: 1) of traditional criminal probable cause, 2) of civil probable cause, or 3) that the establishment was selected for inspection pursuant to a neutral administrative inspection scheme.

#### (1) Civil Specific Probable Cause Warrant

Where there is some specific probable cause for issuance of a warrant such as an employee complaint or competitor's tip, the inspector should be prepared to describe to the U.S. Attorney in detail the basis for this probable cause.

The basis for probable cause will be stated in the affidavit in support of the warrant. This warrant should be used when the suspected violation is one that would result in a civil penalty or other civil action.

**(2) Civil Probable Cause Based on a Neutral Administrative Inspection Scheme**

Where there is no specific reason to think that a violation has been committed, a warrant may still be issued if they Agency can show that the establishment is being inspected pursuant to a neutral administrative scheme. As the Supreme Court stated in Barlow's:

> "Probable cause in the criminal law sense is not required. For purposes of an administrative search, such as this, probable cause justifying the issuance of a warrant may be based not only on specific evidence of an existing violation, but also on a showing that "reasonable legislative or administrative standards for conducting an . . . inspection are satisfied with respect to a particular (establishment)." A warrant showing that a specific business has been chosen for an OSHA search on the basis of a general administrative plan for the enforcement of the act derived from neutral sources such as, for example, dispersion of employees in various type of industries across a given area, and the desired frequency of searches in any of the lesser divisions of the area, would protect an employer's Fourth Amendment rights.

Every program enforced by the Agency has such a scheme by which it prioritizes and schedules its inspections. For example, a scheme under which every permit holder in a given program is inspected on an annual basis is a satisfactory neutral administrative scheme. Also, a scheme in which one out of every three known PCB transformer repair shops is inspected on an annual basis is satisfactory, as long as neutral criteria such as random selection are used to select the individual establishment to be inspected. Headquarters will prepare and transmit to the Regions the particular neutral administrative scheme under which each program's inspections are to be conducted. Inspections not based on specific probable cause must be based on neutral administrative schemes for a warrant to be issued. Examples of two neutral administrative schemes are provided in the appendix. (Attachments II and III)

The Assistant U.S. Attorney will request the inspector to prepare and sign an affidavit that states the facts as he knows them. The statement should include the sequence of events culminating in the refusal to allow entry and a recitation of either the specific probable cause or the neutral administrative scheme which led to the particular establishment's selection for inspection. The Assistant U.S. Attorney will then present a request for an inspection warrant, a suggested warrant, and the inspector's affidavit to a magistrate or Federal district court judge.[25]

[25] The Barlow's decision states that imposing the warrant requirement on OSHA would not invalidate warrantless search provisions in other regulatory statutes since many such statutes already "envision resort to Federal court enforcement when entry is refused". There is thus some question as to whether the existence of a non-warrant Federal court enforcement mechanism in a statute requires the use of that mechanism rather than warrant issuance. We believe that the Barlow's decision gives the Agency the choice of whether to proceed through warrant issuance or through an application for an injunction, since the decision is largely based on the fact that a warrant procedure imposes virtually no burden on the inspecting Agency. In addition, any Agency could attempt to secure a warrant prior to inspection on an ex parte basis, something not available under normal injunction proceedings. Several of the acts enforced by the EPA have provisions allowing the Administrator to seek injunctive relief to assure compliance with the various parts of a particular statute. There may be instances where it would be more appropriate to seek injunctive relief to gain entry to a facility than to attempt to secure a warrant for inspection, although

### (3) Criminal Warrants

Where the purpose of the inspection is to gather evidence for a criminal prosecution, the inspector and the Regional Attorney should request that the U.S. Attorney seek a criminal warrant under Rule 41 of the Federal Rules of Criminal Procedure. This requires a specific showing of probable cause to believe that evidence of a crime will be discovered. Agency policy on the seeking of criminal warrants has not been affected by Barlow's. The distinction between administrative inspections and criminal warrant situations is discussed in Section II.A.2.

## F. Inspecting with a Warrant

Once the warrant has been issued by the magistrate or judge, the inspector may proceed to the establishment to commence or continue the inspection. Where there is a high probability that entry will be refused even with a warrant or where there are threats of violence, the inspector should be accompanied by a U.S. Marshal when he goes to serve the warrant on the recalcitrant owner. The inspector should never himself attempt to make any forceful entry of the establishment. If the owner refuses entry to an inspector holding a warrant but not accompanied by a U.S. Marshal, the inspector should leave the establishment and inform the Assistant to the U.S. Attorney and the designated Regional Attorney. They will take appropriate action such as seeking a citation for contempt. Where the inspector is accompanied by a U.S. Marshal, the Marshal is principally charged with executing the warrant. Thus, if refusal or threat to refuse occurs, the inspector should abide by the U.S. Marshal's decision whether it is to leave, to seek forcible entry, or otherwise.

The inspector should conduct the inspection strictly in accordance with the warrant. If sampling is authorized, the inspector must be sure to carefully follow all procedures, including the presentation of receipts for all samples taken. If records or other property are authorized to be taken, the inspector must receipt the property taken and maintain an inventory of anything taken from the premises. This inventory will be examined by the magistrate to assure that the warrant's authority has not been exceeded.

## G. Returning the Warrant

After the inspection has been completed, the warrant must be returned to the magistrate. Whoever executes the warrant, (i.e., whoever performs the inspection), must sign the return of service form indicating to whom the warrant was served and the date of service. He should then return the executed warrant to the U.S. Attorney who will formally return it to the magistrate or judge. If anything has been physically taken from the premises, such as records or samples, an inventory of such items must be submitted to the court, and the inspector must be present to certify that the inventory is accurate and complete.

at this point we cannot think of any. However, since the warrant process will be far more expeditious than the seeking of an injunction, any decision to seek such an injunction for inspection purposes should be cleared through appropriate Headquarters staff.

## III. Conclusion

Except for requiring the Agency to formalize its neutral inspection schemes, and for generally ending the Agency's authority for initiating civil and/or criminal actions for refusal to allow warrantless inspections, Barlow's should not interfere with EPA enforcement inspections.

Where there is doubt as to how to proceed in any entry case, do not hesitate to call the respective Headquarters program contact for assistance.

Marvin B. Durning

# Appendix H – EPA's Policy on the Use of Digital Cameras for Inspections

*EPA's Policy on the Use of Digital Cameras for Inspections can be found at https://www.epa.gov/compliance/guidance-digital-camera-guidance-epa-civil-inspections-and-investigations*

# Appendix I –
# EPA's Memorandum On
# Deficiency Notice Guidance

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

MEMORANDUM

OFFICE OF ENFORCEMENT

SUBJECT: "Deficiency Notice" Implementation to Improve Quality Assurance in NPDES Permittee Self-Monitoring Activities

FROM: Director, Enforcement Division (EN-338)

TO: Enforcement Division Directors, Regions I - X
Surveillance and Analysis Division Directors, Regions I - X
Director, National Enforcement Investigations Center, Denver

The Enforcement Divisions and the Surveillance and Analysis Divisions in several Regions have developed a form, called a Deficiency Notice, which their inspectors issue at the end of compliance inspections. This Deficiency Notice alerts NPDES permittees to problems in their routine self-monitoring activities. On June 11, 1979, the Office of Water Enforcement proposed that all the Regional offices adopt this form along with the Guidance for its use, and asked for your comments on this proposal. The Deficiency Notice and Guidance, which are attached, reflect your comments.

We have ordered the Deficiency Notice Forms, which will be printed on no-carbon-required paper and will be color coded in pads to correlate with the NPDES Compliance Inspection Form (EPA 3560-3). You may reproduce the attached form for use until you receive these forms.

The Deficiency Notice was designed so that State NPDES programs might easily use it. However, EPA cannot now sanction its use by the States since the Office of Management and Budget (OMB) has not authorized the form for non-Federal use. We will attempt to get OMB approval.

Since the Deficiency Notice provides a swift and simple mechanism for responding to deficiencies in self-monitoring data, I believe that its use will substantially improve the performance of wastewater treatment facilities without creating additional resource burdens or enforcement problems. If you have any questions about the Deficiency Notice or its use, please do not hesitate to call Gary Polvi of my staff at 755-0994.

J. Brian Molloy

Attachments

## DEFICIENCY NOTICE GUIDANCE

### Purpose

The purpose for using the Deficiency Notice is to provide a swift and simple method for improving the quality of data from NPDES self-monitoring activities. Since an inspector may issue a Deficiency Notice during any NPDES compliance inspection to alert the permittee to either existing or potential problems in self-monitoring, its receipt prompts the permittee to quickly take corrective action, as close as possible to the time the inspector perceives the problem.

### Scope

The Deficiency Notice is a tool for use in conjunction with any type of EPA NPDES compliance inspection (i.e., compliance evaluation, sampling, performance audit, biomonitoring, etc.), during which the inspector identifies problems with self-monitoring that warrant response.

The Deficiency Notice and Guidance were designed so that State NPDES compliance monitoring programs could also easily use them. (Note the use of the term "regulatory authority" throughout this guidance.) However, EPA cannot yet sanction the States' use of this form because the Office of Management and Budget (OMB) has not yet approved the form for non-Federal use.

Use of the Deficiency Notice does not apply to a wide range of possible permit violations. It is to be used by the inspector to alert permittees to deficiencies in their self-monitoring activities only. The enforcement office of the regulatory authority (i.e., the EPA Regional Enforcement Division or its State counterpart), not the inspector, will continue to handle violations relative to compliance schedules or effluent limitations.

### Form Description

The Deficiency Notice (see attachment) is one page long and is for use in conjunction with the standard EPA Compliance Inspection Form (EPA 3560-3 September, 1977). The reverse side of the Notice contains general instructions to inspectors for completing the form. The regulatory authority using the form may add other specific instructions that do not conflict with this guidance.

The form has four sections: (1) basic facility data, (2) deficiencies, (3) comments, and (4) inspector identification. These sections contain individual spaces where the inspector during an inspection can log deficiencies in the following self-monitoring activities: (1) monitoring location, (2) flow measurement, (3) sample collection/holding time, (4) sample preservation, (5) test procedures, (6) record keeping, (7) other self-monitoring deficiencies (i.e., sampling frequency, instrument calibration, etc.). Since the existing Compliance Inspection Form (which inspectors now complete) includes questions and answers relating to the above seven activities, inspectors should not need much additional time to complete this Deficiency Notice.

**Administrative Procedures**

With few exceptions (see March 7, 1977 EMS Guide), the handling and tracking of Deficiency Notices will follow the normal EPA Enforcement Management System (EMS) procedures. Inspectors can issue the Deficiency Notice to a permittee immediately following a compliance inspection if they discover any permit deficiencies which the Notice includes. Under unusual circumstances inspectors may delay issuing a Deficiency Notice until after conferring with other officials of the regulatory authority.

EMS requires the offices responsible for inspections and for NPDES enforcement to jointly establish a policy delineating the procedure for the permittee to appropriately respond to the Deficiency Notice. In the EPA Regions, the Directors of the Enforcement Division and the Surveillance and Analysis (S&A) Division will develop this policy. If the offices agree to allow the permittee to submit a separate written response rather than to include the response as part of a regular Discharge Monitoring Report (DMR) submission, they will require the inspector to record the necessary mailing instructions and deadline for response under the additional comment section of the Deficiency Notice. The inspector indicates the appropriate method for the permittee's response in the "requested action" section of the Deficiency Notice. Due to the nature of most self-monitoring problems it is reasonable for the regulatory authority to ask that the permittee submit a written description of any corrective actions within 15 work days after receiving the Notice. Where the permittee is asked to respond as part of a regular DMR submission, a similar reporting time allowance should be allotted. In either response option, the inspector should always indicate in the Deficiency Notice the requested date for permittee response.

Having the permittee document Deficiency Notice corrective actions as part of a regular DMR submission establishes accountability for the compliance inspection in the official NPDES permit compliance file even before a compliance review is undertaken. This is a resource efficient method of documenting the minimum benefit from performing inspections.

The issuance of a Deficiency Notice is not a formal enforcement action. It is not intended and must not be construed as an administrative or legal order to the permittee. Therefore, the action by the permittee to respond is voluntary, but incentive for such response comes from the positive consideration it may have on further formal enforcement follow-up of the inspection.

When the regulatory authority receives the permittee's response to the Deficiency Notice, they will review the inspection data and the permittee's response according to EMS procedures. If during routine reviews of inspection data, the authorities note deficiencies in self-monitoring data and note that the inspector did not issue a Deficiency Notice, they may issue one at any time.

The responsibility for all enforcement activity shall always remain in the enforcement/compliance review office of the regulatory authority. After agreement between the Directors of the Regional Enforcement Division and the S&A Division, these offices should incorporate details for insuring which office retains which responsibility into the Regional EMS. Whether or not a Deficiency Notice has been issued, the enforcement office of the regulatory

authority can take administrative or legal action at any time. Also, a Deficiency Notice may not be appropriate in those cases where additional enforcement action is expected or litigation against the permittee is already underway.

# EPA Deficiency Notice Form

| **DEFICIENCY NOTICE**<br><br>NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) | PERMITTEE *(Facility)* NAME AND ADDRESS |
|---|---|
| PERMITTEE REPRESENTATIVE *(Receiving this Notice)*/Title | NPDES PERMIT NO. |

During the compliance inspection carried out on *(Date)* the deficiencies noted below were found. Additional areas of deficiency may be brought to your attention following a complete review of the Inspection Report and other in-formation on file with the REGULATORY AUTHORITY administering your NPDES PERMIT.

## D E F I C E N C I E S

MONITORING LOCATION *(Describe)*

FLOW MEASUREMENT *(Describe)*

SAMPLE COLLECTION / HOLDING TIME *(Describe)*

SAMPLE PRESERVATION *(Describe)*

TEST PROCEDURES SECTION 304(h). **40 CFR Part 136** *(Describe)*

RECORD KEEPING *(Describe)*

OTHER SELF-MONITORING DEFICIENCIES *(Describe)*

ADDITIONAL COMMENTS

REQUESTED ACTION—Your attention to the correction of the deficiencies noted above is requested. Receipt of a description of the corrective actions taken will be considered in the determination of the need for further Administrative or Legal Action. Your response is to be **(Inspector line out inappropriate response method)**: (1) Include with your next *NPDES Discharge Monitoring Report (DMR) or (2) submitted as directed by the inspector.* Questions regarding possible follow-up action can be answered by the REGULATORY AUTHORITY to which your DMRs are submitted and which administers your NPDES Permit.

| INSPECTOR'S SIGNATURE | INSPECTOR'S ADDRESS/PHONE NO. | REGULATORY AUTHORITY/ADDRESS | DATE |
|---|---|---|---|
| INSPECTOR'S PRINTED NAME | | | |

**EPA Form 3560-4 (2-80)**

# Appendix J –
# Inspection Conclusion Data Summary (ICDS)

## EPA MANUAL INSPECTION CONCLUSION DATA SHEET (ICDS) FORM

1. **Region**: _____ Facility Name/Location: _____

2. **General Facility Permit ID or Media-Specific Permit ID number (e.g. NPDES permit #)**:
_____

3. **SIC (4-digit):** ☐☐☐☐ OR NAICS **Code (5-digit)**: ☐☐☐☐☐

4. **Date of Inspection**: _____ (mm/dd/yyyy)

5. **Media Type (check one only)**
CAA-Stationary ☐ CWA-NPDES ☐ GLP ☐ TSCA Lead Paint ☐ CAA 112r ☐
CAA-Mobile Sources ☐ RCRA ☐ UST ☐ TSCA core, PCBs, asbestos ☐

6. **Deficiencies:** Did you observe deficiencies during inspection? Yes ☐ No ☐ *[N/A is not allowed]*
*a. If YES, go to #7*
*b. If NO, go to #9*

7. **If YES**: Did you communicate the deficiencies to the facility during the inspection? Yes ☐ No ☐

8. **Actions Taken:** Did you observe or see the facility take any actions during the inspection to address the deficiencies communicated? Yes ☐ No ☐ *[N/A is not allowed]*
*a. If NO, go to #9*
*b. If YES*, check the action(s) taken, or describe any other actions taken. *(Check all that apply)*

**Action(s) taken**
____ Verified compliance with previously issued enforcement action -part or all conditions
____ Corrected recordkeeping deficiencies
____ Corrected monitoring deficiencies
____ Completed a notification or a report
____ Requested a permit application
____ Implemented new or improved management practices or procedures
____ Improved pollutant identification (e.g., labeling, manifesting, storage, etc.)
____ Reduced pollution (e.g., use reduction, industrial process change, emissions or discharge change, etc.). ***Specify the pollutant(s) reduced only if this action is checked.***

**Water:** Ammonia ☐ BOD ☐ COD ☐ TSS ☐ O/G ☐ TC ☐ DO ☐ Metals ☐ CN ☐

**Air:** NOx ☐ SO2 ☐ PM ☐ VOC ☐ Metals ☐ HAPs ☐ CO ☐

***List other actions observed or other pollutants reduced***: _____

9. **Assistance:** Did you provide *general* assistance based on national policy? Yes ☐ No ☐
Did you provide *site-specific* assistance based on national policy? Yes ☐ No ☐
***Note:*** EPA inspectors are **not required** to provide compliance assistance.

**Optional Information**: Describe actions taken or assistance provided to assist the facility.
_____
_____

# Appendix K –
# Draft Guidance for
# Releasing Civil Inspection Reports

*[Appendix K: Draft Guidance for Releasing Civil Inspection Reports]*

# Appendix L – Sample Discharge Monitoring Report (DMR) Form

## DMR Copy of Record

*Permit*

| | | | | | |
|---|---|---|---|---|---|
| **Permit #:** | | **Permittee:** | | **Facility:** | |
| **Major:** | | **Permittee Address:** | | **Facility Location:** | |
| **Permitted Feature:** | 101<br>Intake Structure | **Discharge:** | **101-1**<br>HYDRAULICALLY DREDGED MATERIAL | | |
| *Report Dates & Status* | | | | | |
| **Monitoring Period:** | **From 03/01/15 to 03/31/15** | **DMR Due Date:** | **04/30/15** | **Status:** | **NetDMR Validated** |
| *Considerations for Form Completion* | | | | | |

*Principal Executive Officer*

| | | |
|---|---|---|
| **First Name:** | **Title:** | **Telephone:** |
| **Last Name:** | | |

*No Data Indicator (NODI)*

**Form NODI:** --

| Parameter Code | Parameter Name | Monitoring Location | Season # | Param. NODI | | Quantity or Loading Qualifier 1 | Quantity or Loading Value 1 | Quantity or Loading Qualifier 2 | Quantity or Loading Value 2 | Quantity or Loading Units | Quality or Concentration Qualifier 1 | Quality or Concentration Value 1 | Quality or Concentration Qualifier 2 | Quality or Concentration Value 2 | Quality or Concentration Qualifier 3 | Quality or Concentration Value 3 | Quality or Concentration Units | # of Ex. | Frequency of Analysis | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sample | | | | | | | | | | | | | | | |
| 00011 | Temperature, water deg. fahrenheit | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | | | Req Mon MO AVG | | Req Mon DAILY MX | 15 - deg F | | 24/01 - Hourly | CN - CONTIN |
| | | | | | Value NODI | | | | | | | | | 3 - Special Report Attached | | 3 - Special Report Attached | | | | |
| | | | | | Sample | = | 438650 | | | 07 - gal/d | | | | | | | | | 01/01 - Daily | TM - TOTALZ |
| 00056 | Flow rate | 7 - Intake from Stream | 0 | -- | Permit Req. | | Req Mon MO AVG | | | 07 - gal/d | | | | | | | | 0 | 01/01 - Daily | TM - TOTALZ |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | | | | = | 6.4 | | | = | 7.2 | 12 - SU | | 02/30 - Twice Per Month | GR - GRAB |
| 00400 | pH | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | Req Mon INST MIN | | | | Req Mon INST MAX | 12 - SU | 0 | 01/30 - Monthly | GR - GRAB |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | | | | | | | | = | 6680 | 19 - mg/L | | 01/30 - Monthly | GR - GRAB |
| 00500 | Solids, total | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | | | | | Req Mon INST MAX | 19 - mg/L | 0 | 01/30 - Monthly | GR - GRAB |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | | | | | | | | < | 0.01 | 19 - mg/L | | 01/30 - Monthly | GR - GRAB |
| 01032 | Chromium, hexavalent [as Cr] | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | | | | | Req Mon INST MAX | 19 - mg/L | 0 | 01/30 - Monthly | GR - GRAB |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | | | | | | | | = | 4.31 | 19 - mg/L | | 01/30 - Monthly | GR - GRAB |
| 01034 | Chromium, total [as Cr] | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | | | | | Req Mon INST MAX | 19 - mg/L | 0 | 01/30 - Monthly | GR - GRAB |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | | | | | | | | = | 15.1 | 19 - mg/L | | 01/30 - Monthly | GR - GRAB |
| 01051 | Lead, total [as Pb] | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | | | | | Req Mon INST MAX | 19 - mg/L | 0 | 01/30 - Monthly | GR - GRAB |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | | | | | | | | < | 5.41 | 28 - ug/L | | 01/30 - Monthly | GR - GRAB |
| 22456 | Polynuclear Aromatic Hydrocarbons [PAHs] | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | | | | | | | | Req Mon INST MAX | 28 - ug/L | 0 | 01/30 - Monthly | GR - GRAB |
| | | | | | Value NODI | | | | | | | | | | | | | | | |
| | | | | | Sample | | | = | 759250 | 07 - gal/d | | | | | | | | | 01/01 - Daily | TM - TOTALZ |
| 50047 | Flow, maximum during 24 hr period | 7 - Intake from Stream | 0 | -- | Permit Req. | | | | Req Mon DAILY MX | 07 - gal/d | | | | | | | | 0 | 01/01 - Daily | TM - TOTALZ |
| | | | | | Value NODI | | | | | | | | | | | | | | | |

*Submission Note*

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

*Edit Check Errors*

*No errors.*

*Comments*

The NetDMR parameter is listed as "Temperature, water deg. Fahrenheit" (code 00011) and the NetDMR requires the "monthly average" and "daily maximum." These two reporting requirements (between NetDMR and the NPDES permit) are not the same, so based on our understanding, we are providing the information required by the NPDES permit as an attachment.

*Attachments*

| Name | Type | Size |
|---|---|---|
| Mar2015InflAttachment.pdf | pdf | 80692 |

*Report Last Saved By*

| | | |
|---|---|---|
| **User:** | **Date/Time:** | 2015-04-28 08:34 (Time Zone: -04:00) |
| **Name:** | | |
| **E-Mail:** | | |

# Appendix M –
# Example Chain-of-Custody Form

**U.S. ENVIRONMENTAL PROTECTION AGENCY**
**Environmental Services Division**

**CHAIN OF CUSTODY RECORD**

**REGION VIII, ONE DENVER PLACE**
**999 18TH STREET**
**DENVER, CO 80202-2413**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| **SAMPLERS: *(Signature)*** | | | | | | | | **NO** | | | | | | | | | |
| **STAT. NO** | **DATE** | **TIME** | **COMP** | **GRAB** | **STATION LOCATION** | | | **OF CON-TAINERS** | | | | | | | | | **REMARKS** |
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| | | | | | | | | | | | | | | | | | |
| **Relinquished by: *(Signature)*** | | | **Date/Time** | | **Received by: *(Signature)*** | | | **Relinquished by: *(Signature)*** | | | | **Date/Time** | | **Received by: *(Signature)*** | | | |
| **Relinquished by: *(Signature)*** | | | **Date/Time** | | **Received by: *(Signature)*** | | | **Relinquished by: *(Signature)*** | | | | **Date/Time** | | **Received by: *(Signature)*** | | | |
| **Relinquished by: *(Signature)*** | | | **Date/Time** | | **Received for Laboratory by: *(Signature)*** | | | **Date/Time** | | | | **Remarks** | | | | | |

**Distribution Original Accompanies Shipment First Copy to Coordinator Field File Second Copy to Representative of Inspected Facility**

**Split Samples**
**[ ] Accepted [ ]**

**Signature**

**R8 EPA-014B (4-21-86)**

**8-15076**

# Appendix N – Updated Fact Sheet: Department of Transportation Hazardous Materials

# DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIALS TRAINING

***What are DOT training requirements?***

DOT's training requirements can be found at 49 CFR Part 172, Subpart H. In general, any employee who has a responsibility working with hazardous materials (hazmat) that is placed in commerce must have hazmat training. The employee must be familiar or aware of the requirements enabling the employee to recognize and identify hazardous materials, i.e., hazardous samples vs. non- hazardous samples, consistent with the hazard communication standards. The training must be commensurate with functions and responsibilities of the employee.

***Why does hazmat training apply to me?***

As an inspector, you are likely to be a hazmat employee because you collect samples during an inspection and prepare the hazmat samples for transportation. The EPA is a hazmat employer because the Agency causes hazmat to be transported or shipped in commerce through its employees. DOT defines "hazmat employer" to include any department, agency, or instrumentality of the United States, a State, a political subdivision of a State, or an Indian Nation. Administrative and secretarial staff are also subject to DOT training if their responsibilities cause hazmat materials to be placed into commerce, i.e., preparing shipping papers.

***Does my EPA training substitute for DOT training requirements?***

The EPA Health & Safety course provides the inspector with information on protecting oneself for on-the-job hazards and would meet DOT's Safety training requirement. It does **not** meet the General awareness/familiarization requirement. See DOT's training requirements.

***What type of DOT training do I need?***

DOT hazmat training is function-specific. For most inspectors, the general awareness hazardous materials training course found on the DOT's website will be sufficient to meet the DOT training requirements. Alternatively, the employer can provide function specific training from other sources. (see below).

***What are DOT's training requirements for hazardous materials?***

DOT's hazmat training, 49 CFR Part 172.704, focuses on three requirements applicable to inspectors and administrative staff:

- General awareness/familiarization
  - ✓ Each hazmat employee shall be provided general awareness/familiarization training designed to provide familiarity with the hazmat requirements and to enable the employee to recognize and identify hazardous materials consistent with the hazard communication standards.

***What are DOT's requirements for hazardous materials?***

- Function-specific

- ✓ Each hazmat employee shall be provided function-specific training as it applies to the employee's job responsibilities.

- Safety
  - ✓ Emergency response information required by part 172, subpart G, i.e., information that can be used in the mitigation of an incident involving hazardous materials; Measures to protect the employee from the hazards associated with hazardous materials to which they may be exposed in the work place, including specific measures the hazmat employer has implemented to protect employees from exposure; and Methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing hazardous materials.

***Where can I find training opportunities?***
A good training resource is DOT's hazmat page, hazmat.dot.gov/training. You can download the instructor's and student's training manual for in-house use. The training manual does include test questions. Self-training is acceptable by DOT so long as 49 CFR Part 172.704 training requirements are met. The DOT's Transportation Safety Institute in Oklahoma City, OK offers training on-site. Course dates are available from the website.

In addition to DOT's hazmat site, this web link, hazmat.dot.gov/thirdpty.htm identifies third party providers who offer a variety of hazmat training courses.

***How long does the certification last?***
The hazardous materials training is required to be completed within the first 90 days of employment. The certification period is good for three years and then the hazardous materials training program must be retaken. If your job responsibilities change, your training needs may change.

***Who is responsible for training?***
The employer is responsible. DOT's definition of employer is not clear in terms of EPA's administrative structure. "Employer" could be defined as the Administrator or any other manager in direct supervisory line of the employee.

***Who is responsible for keeping the training record?***
The employer is responsible for keeping the employee's records.

***What should be in the training record?***
Documentation that shows the employee has completed the necessary training, and has been tested and certified.

***Specifically, what documents need to be retained?***
A record of current training, inclusive of the preceding three years must be retained for as long as the employee is employed by that employer as a hazmat employee and for 90 days thereafter. The record shall include the following information:

(1) The inspector's name;
(2) The most recent training completion date of the inspector's training;

(3) A description, copy, or the location of the training materials used to meet the requirements;
(4) The name and address of the person providing the training; and
(5) Certification that the hazmat employee has been **trained and tested**.

***Does the employee have to "pass" the test?***
The requirements do not state that the employee must "pass" a test; however, an employee may only be certified in areas in which he/she can successfully perform their hazmat duties.

***Know Your Shipper's Requirements!***
Before collecting samples, know which shipping company you will be using to ship your samples. Some require additional training and certification beyond the basic DOT requirements. Here are three common carriers with some of their requirements for shipping hazmat materials.

***Federal Express (FedEx)***
The shipping method you select determines what type of training FedEx expects you to have completed. If you plan to ship samples by ground, the DOT training requirements are sufficient. If you plan to ship the samples by air, then you must be trained according to International Air Transport Association (IATA) regulations. Successful completion of the IATA requirements will meet DOT's hazard communications requirements. IATA training and information can be found at: www.iata.org.

***United Postal Service (UPS)***
Documentation that shows the employee has awareness training is acceptable by UPS for ground shipments. Shipments by air require IATA training.

***United States Postal Service (USPS)***
DOT's general awareness training and testing is acceptable by USPS for both shipping by ground and air. However, the Postal Service does have limits which are more stringent than DOT's regulations. Check this website for further details - http://pe.usps.gov/text/dmm/c023.htm

Before shipping, you should inquire with the shipping company if they have additional requirements for handling, packaging and shipment limitations for the hazmat materials.

Here are a few issues an inspector may face with the different shippers:

- Do you want them to meet you at the site? You may need to call ahead to schedule the pickup before you arrive at the site to collect samples.
- Do you plan on dropping the shipment off? Not all offices can accept dangerous goods and hazmat.
- Shipping papers may need to be typed, not handwritten. Do you bring a portable typewriter with you or type the shipping papers before leaving the office?

# Appendix O – Supplemental Flow Measurement Information

# SUPPLEMENTAL FLOW MEASUREMENT INFORMATION

## Basic Hydraulic Calculations

The relationship between the flow rate (Q), the average velocity (V), and the cross-sectional area of the flow (A) is given by the following equation:

$$Q = VA$$

where Q = flow in cubic feet per second
V = velocity in feet per second
A = area in square feet.

To convert flow in cubic feet of water per second to flow in gallons of water per minute, the following proportionality is used:

$$\frac{\text{cubic feet}}{\text{second}} \cdot \frac{\text{7.48 gallons water}}{\text{cubic foot of water}} \cdot \frac{\text{60 seconds}}{\text{minute}} = \frac{\text{gallons}}{\text{minute}}$$

To convert from cubic feet per second to million gallons per day, multiply the number of cubic feet per second by 0.6463.

The cross-sectional area (A) of a pipe is described by:

$$A = \pi d^2$$

where d = diameter of the pipe in feet.

## Flow Measurement Devices

Flow data may be collected instantaneously or continuously. Instantaneous flows must be measured when samples are taken so that the pollutant concentrations can be correlated to flow data. In a continuous flow measurement system, flow measurements are summed to obtain a value for the total flow to verify NPDES permit compliance.

A typical continuous flow measurement system consists of a flow device, a flow sensor, transmitting equipment, a recorder, and a totalizer.

Instantaneous flow data can be obtained without using such a system. The primary flow device is constructed to yield predictable hydraulic responses related to the rate of wastewater or

water flowing through the device. As previously mentioned, examples of such devices include weirs and flumes, which relate water depth (head) to flow; Venturi meters, which relate differential pressure to flow; and electromagnetic flowmeters, which relate induced electric voltage to flow. In most cases, a standard primary flow device has undergone detailed testing and experimentation and its accuracy has been verified.

Flow is measured by many methods; some are designed to measure open channel flows, and others are designed to measure flows in pipelines. A complete discussion of all available flow measurement methods, their supporting theories, and the devices used are beyond the scope of this manual. The most commonly used flow measurement devices and procedures for inspecting them will be described briefly in the following paragraphs. For more detail, inspectors should consult the publications listed in References at the end of this chapter.

**Primary Devices**

Weirs. A weir consists of a thin vertical plate with a sharp crest that is placed in a stream, channel, or partly filled pipe. Figure O-1 shows a profile of a sharp-crested weir and indicates the appropriate nomenclature. Four common types of sharp-crested weirs are shown in Figure O-2. This figure illustrates the difference between suppressed and contracted rectangular weirs and illustrates Cipolletti (trapezoidal) and V-notch (triangular) weirs.

To determine the flow rate, it is necessary to measure the hydraulic head (height) of water above the crest of the weir. For accurate flow measurements, the crest must be clean, sharp, and level. The edge of the crest must not be thicker than 1/8 inch.

The rate of flow over a weir is directly related to the height of the water (head) above the crest at a point upstream of the weir where the water surface is level. To calculate the discharge over a weir, the head must first be measured by placing a measuring device upstream of the weir, at a distance of at least 4 times an approximate measurement of the head. A measurement can be taken at the weir plate to approximate the head. However, if this measurement is used to calculate the discharge, this value will provide only a rough estimate of the discharge.

The head-discharge relationship formulas for nonsubmerged contracted and suppressed rectangular weirs, Cipolletti weirs, and V-notch weirs are provided in Table O-1. Discharge rates for the 90-degree V-notch weir (when the head is measured at the weir plate) are included in Table O-2. Flow rates for 60- and 90-degree V-notch weirs can be determined from the graph in Figure O-3. Minimum and maximum recommended flow rates for Cipolletti weirs are provided in Table O-3. Figure O-4 is a nomograph for flow rates for rectangular weirs using the Francis formulas.

Parshall Flume. The Parshall flume is composed of three sections: a converging upstream section, a throat or contracted section, and a diverging or dropping downstream section. When there is free fall out of the throat of a Parshall flume, no diverging downstream section is required. It operates on the principle that when open channel water flows through a constriction in the channel, it produces a hydraulic head at a certain point upstream of the constriction that is proportional to the flow. The hydraulic head is used to calculate the flow.

Flow curves are shown in Figure O-5 to determine free flow through 3 inches to 50 feet Parshall flumes.

The Parshall flume is good for measuring open channel waste flow because it is self-cleaning; therefore, sand or suspended solids are unlikely to affect the operation of the device. The flume is both simple and accurate.

The flume size is given by the width of the throat section. Parshall flumes have been developed with throat widths from 1 inch to 50 feet. The configuration and standard nomenclature for Parshall flumes are provided in Figure O-6. Strict adherence to all dimensions is necessary to achieve accurate flow measurements. Figure O-6 provides Parshall flume dimensions for various throat widths, and Table O-4 provides the minimum and maximum flow rates for free flow through Parshall flumes.

For free nonsubmerged flow in a Parshall flume of throat and upstream head (Ha in feet), the discharge relationship for flumes of 8 feet or less is given by the general equation Q = CWHan, where Q = flow.

Table O-5 provides the values of C, n, and Q for different sizes (widths) of the Parshall flumes. Nomographs, curves, or tables are readily available to determine the discharge from head observations.

Flow through a Parshall flume may also be submerged. The degree of submergence is indicated by the ratio of the downstream head to the upstream head (Hb/Ha), which is the submergence ratio. Hb is the height of water measured above the crest. The flow is submerged if the submerged ratio is:

- Greater than 0.5 for flumes under 3 inches
- Greater than 0.6 for flumes 6 to 9 inches
- Greater than 0.7 for flumes 1 to 8 feet
- Greater than 0.8 for flumes larger than 8 feet.

If submerged conditions exist, the inspector should apply a correction factor to the free flow determined using the relationship Q= CWHn. These correction factors are shown in Figure O-7 for different sizes of the Parshall flume.

Palmer-Bowlus Flume. The Palmer-Bowlus flume is also composed of three sections: a converging upstream section, a contracted section or throat, and a diverging downstream section (Figure O-8). The upstream depth of the water (head) above the raised step in the throat is related to the discharge rate. The head should be measured at a distance d/2 upstream of the throat where d is the size (width) of the flume. The height of the step is usually unknown until the manufacturer's data are consulted, it is difficult to manually measure the height of water above the step at an upstream point. The dimensions for Palmer-Bowlus flumes are not standardized as they are for Parshall flumes. Therefore, no standard flow equation exists. Instead, rating curves are provided by manufacturers of Palmer-Bowlus flumes to relate the head to the discharge rate.

The flume must be installed with a minimum channel slope downstream to maintain critical flow through the flume and prevent the flume from becoming submerged. A small jump or rise in the water surface below the throat indicates that critical flow through the flume has probably occurred and submerged conditions do not exist. Accurate flow measurements can usually be obtained with upstream depths that are up to 95 percent of the pipe diameter. Table O-6 provides a table of the maximum slopes recommended for installation of Palmer-Bowlus flumes. Advantages of this type of flow measurement device are the following:

- It is easily installed in existing systems.
- Head loss is insignificant.
- Unit is self-cleaning.

Venturi Meter. The Venturi (differential pressure) meter is one of the most accurate primary devices for measuring flow rates in pipes. The Venturi meter is basically a pipe segment consisting of an inlet section, a converging section, and a throat, along with a diverging outlet section as illustrated in Figure O-9. The water velocity is increased in the constricted portion of the inlet section resulting in a decrease in the static pressure. The pressure difference between the inlet pipe and the throat is proportional to the square of the flow. The pressure difference can easily be measured very accurately, resulting in an accurate flow measurement. An advantage of the Venturi meter is that it causes little pressure (head) loss. The formula for calculating the flow in a Venturi meter is as follows:

$$Q = cKd_2^2\sqrt{h_1 - h_2} \qquad \text{(King1963)}$$

where Q = volume of water, in cubic feet per second
c = discharge coefficient, obtain from Table O-7. C varies with Reynold's number, meter surfaces, and installation

h1 = pressure head at center of pipe at inlet section, in feet of water
h2 = pressure head at throat, in feet of water
K = constant which relates d2 to d1 for Venturi meters. Obtain values of K from Table O-8 or calculate according to the formula

$$K = \frac{\frac{4}{}}{\sqrt{\frac{2g}{1 - \left[\frac{d_2}{d_1}\right]^4}}}$$

where $d_2$ = throat diameter, in feet
$d_1$ = diameter of inlet pipe, in feet

Electromagnetic Flowmeter. The electromagnetic flowmeter operates according to Faraday's Law of Induction: the voltage induced by a conductor moving at right angles through a

magnetic field will be proportional to the velocity of the conductor through the field. In the electromagnetic flowmeter, the conductor is the liquid stream to be measured and the field is produced by a set of electromagnetic coils. A typical electromagnetic flowmeter is shown in Figure O-10. The induced voltage is transmitted to a converter for signal conditioning. The meter may be provided with recorder and totalizer using electric or pneumatic transmission systems. This type of flowmeter is useful at sewage lift stations and for measuring total raw wastewater flow or raw or recirculated sludge flow.

Electromagnetic flowmeters are used in full pipes and have many advantages, including: accuracies of +1 percent, a wide flow measurement range, a negligible pressure loss, no moving parts, and rapid response time. However, they are expensive and buildup of grease deposits or pitting by abrasive wastewaters can cause error. Regular checking and cleaning of the electrodes is necessary. The meter electronics can be checked for proper operation with devices specially made for this purpose. The meter should be checked at least annually. The calibration of an electromagnetic flowmeter cannot be verified except by returning it to the factory or by the dye dilution method.

Propeller Meter. The propeller meter (Figure O-11) operates on the principle that liquid hitting the propeller will cause the propeller to rotate at a speed proportional to the flow rate. The meter is self-contained and requires no energy or equipment other than a mechanical totalizer to obtain a cumulative flow reading. Equipment may be added to the meter to produce a flow reading, to pace chemical feed equipment, and to control telemetering equipment for remote readout. The calibration of a propeller meter can be checked by returning it to the factory, by comparing its readings to another meter measuring the same flow, or by using the dye dilution method.

**Secondary Devices**

Secondary devices are the devices in the flow measurement system that translate the interaction of primary devices in contact with the fluid into the desired records or readout. They can be organized into two broad classes:

- Nonrecording type with direct readout (e.g., a staff gauge) or indirect readout from fixed points (e.g., a chain, wire weight, float)
- Recording type with either digital or graphic recorders (e.g., float in well, float in flow, bubbler, electrical, acoustic).

The advantages and disadvantages of various secondary devices are provided in Table O-9.

Transit-Time Flowmeter. The transit-time flowmeter (Figure O-12) is a new ultrasonic technology that can be used as a secondary device. As a secondary device, the transit-time flowmeter must be used in conjunction with one of the primary devices described above. The transit-time flowmeter utilizes a minimum of one pair of transducers that alternately transmit and receive an ultrasonic signal. The transducers are placed on or in the pipe at a defined spacing based on a predetermined angle. The signal between the pair of transducers is alternately transmitted, first upstream and then downstream. At a zero flow condition, the time for the two signals to be transmitted and received are equal. However, as flow begins, the

liquid's flow velocity speeds up the signal in the up to downstream direction while slowing the signal in the down to upstream direction. The difference in time between the two signals is proportional to the liquid's velocity. Knowing the liquid's flow velocity and the pipe inner diameter area provides the instantaneous flow rate. The flowmeter provides analog and discrete outputs for remote recorder and totalization of flow.

Transit-time flowmeters are suitable for the typical range of liquids found in full pipe applications. The clamp-on nature of the meter allows for its installation without the need to shut down the existing line. Transit-time flowmeters are available in both permanent and portable configurations.

**Pumps**

Some wastewater facilities may need to measure flow by means of pumps in which discharge-versus-power relationships have been determined from measurements of the average output or input during a period in which discharge measurements were made. Suitable curves may be developed from these test data. When readily available from the manufacturer, pump curves may be used by the inspector to estimate flow.

Because of wear on pumps and uncertainty regarding actual discharge heads, pump curves at best only provide an estimate of the flow. Pump curves are not normally accurate enough to be used for NPDES permit discharge flow measurements. Pump curves have been used for determining large flows, such as the cooling water discharge from large steam electric power plants, where a high degree of accuracy was not necessary.

## Table O-1

## Head-Discharge Relationship Formulas for Nonsubmerged Weirs*

| Weir Type | Contracted | Suppressed | Remarks | Reference |
|---|---|---|---|---|
| Rectangular | | | | |
| Francis formulas | $Q = 3.33 (L - 0.1 nH)H^{1.5}$ | $Q = 3.33 L H^{1.5}$ | Approach velocity neglected | King 1963 |
| | $Q = 3.33 ((H + h)^{1.5}-h^{1.5})(L - 0.1nH)$ | $Q = 3.33 L((H + h)^{1.5} - h^{1.5})$ | Approach velocity considered | King 1963 |
| Cipolletti | $Q = 3.367 L H^{1.5}$ | NA | Approach velocity neglected | King 1963 |
| | $Q = 3.367 L (H + h)^{1.5} - h^{1.5}$ | NA | Approach velocity considered | EPA 1973 |
| V-notch | | | | |
| Formula for 90° V-notch only | $Q = 2.50 H^{2.5}$ | NA | Not appreciably affected by approach velocity | King 1963 |
| | $Q = 3.01 H_W 2.48$ | NA | Head measured at weir plate | Eli and Peterson 1979 (EPA-61809A-2B) |

Q = discharge in cubic feet
H = head in feet
NA = not applicable
$H_W$ = head in feet at weir plate
n = number of end contractions
L = crest length in feet
h = head in feet due to the approach velocity = $v^2/2g$
V = approach velocity
g = gravity (32.2 ft/sec$^2$)

*Selection of a formula depends on its suitability and parameters under consideration.

## Table O-2

## Discharge of 90° V-Notch Weir—Head Measured at Weir Plate

| Head@ Weir in Feet | Flow Rate in CFS | Head@ Weir in Feet | Flow Rate in CFS | Head@ Weir in Feet | Flow Rate in CFS |
|---|---|---|---|---|---|
| 0.06 | 0.003 | 0.46 | 0.439 | 0.86 | 2.071 |
| 0.07 | 0.004 | 0.47 | 0.463 | 0.87 | 2.140 |
| 0.08 | 0.006 | 0.48 | 0.488 | 0.88 | 2.192 |
| 0.09 | 0.008 | 0.49 | 0.513 | 0.89 | 2.255 |
| 0.10 | 0.010 | 0.50 | 0.540 | 0.90 | 2.318 |
| 0.11 | 0.013 | 0.51 | 0.567 | 0.91 | 2.382 |
| 0.12 | 0.016 | 0.52 | 0.595 | 0.92 | 2.448 |
| 0.13 | 0.019 | 0.53 | 0.623 | 0.93 | 2.514 |
| 0.14 | 0.023 | 0.54 | 0.653 | 0.94 | 2.582 |
| 0.15 | 0.027 | 0.55 | 0.683 | 0.95 | 2.650 |
| 0.16 | 0.032 | 0.56 | 0.715 | 0.96 | 2.720 |
| 0.17 | 0.037 | 0.57 | 0.747 | 0.97 | 2.791 |
| 0.18 | 0.043 | 0.58 | 0.780 | 0.98 | 2.863 |
| 0.19 | 0.049 | 0.59 | 0.813 | 0.99 | 2.936 |
| 0.20 | 0.056 | 0.60 | 0.848 | 1.00 | 3.010 |
| 0.21 | 0.063 | 0.61 | 0.883 | 1.01 | 3.085 |
| 0.22 | 0.070 | 0.62 | 0.920 | 1.02 | 3.162 |
| 0.23 | 0.079 | 0.63 | 0.957 | 1.03 | 3.239 |
| 0.24 | 0.087 | 0.64 | 0.995 | 1.04 | 3.317 |
| 0.25 | 0.097 | 0.65 | 1.034 | 1.05 | 3.397 |
| 0.26 | 0.107 | 0.66 | 1.074 | 1.06 | 3.478 |
| 0.27 | 0.117 | 0.67 | 1.115 | 1.07 | 3.556 |
| 0.28 | 0.128 | 0.68 | 1.157 | 1.08 | 3.643 |
| 0.29 | 0.140 | 0.69 | 1.199 | 1.09 | 3.727 |
| 0.30 | 0.152 | 0.70 | 1.243 | 1.10 | 3.813 |
| 0.31 | 0.165 | 0.71 | 1.287 | 1.11 | 3.889 |
| 0.32 | 0.178 | 0.72 | 1.333 | 1.12 | 3.987 |
| 0.33 | 0.193 | 0.73 | 1.379 | 1.13 | 4.076 |
| 0.34 | 0.207 | 0.74 | 1.426 | 1.14 | 4.166 |
| 0.35 | 0.223 | 0.75 | 1.475 | 1.15 | 4.257 |
| 0.36 | 0.239 | 0.76 | 1.524 | 1.16 | 4.349 |
| 0.37 | 0.256 | 0.77 | 1.574 | 1.17 | 4.443 |
| 0.38 | 0.273 | 0.78 | 1.625 | 1.18 | 4.538 |
| 0.39 | 0.291 | 0.79 | 1.678 | 1.19 | 4.634 |
| 0.40 | 0.310 | 0.80 | 1.730 | 1.20 | 4.731 |
| 0.41 | 0.330 | 0.81 | 1.785 | 1.21 | 4.829 |
| 0.42 | 0.350 | 0.82 | 1.840 | 1.22 | 4.929 |
| 0.43 | 0.371 | 0.83 | 1.896 | 1.23 | 5.030 |
| 0.44 | 0.393 | 0.84 | 1.953 | 1.24 | 5.132 |
| 0.45 | 0.415 | 0.85 | 2.012 | 1.25 | 5.235 |

Equation $Q = 3.01\ Hw^{2.48}$, where Hw, head, is in feet at the weir and Q is in cubic feet per second.

## Table O-3

### Minimum and Maximum Recommended Flow Rates for Cipolletti Weirs

| Crest Length, ft. | Minimum Head, ft. | Minimum Flow Rate | | Maximum Head, ft. | Maximum Flow Rate | |
|---|---|---|---|---|---|---|
| | | MGD | CFS | | MGD | CFS |
| 1 | 0.2 | 0.195 | 0.301 | 0.5 | 0.769 | 1.19 |
| 1.5 | 0.2 | 0.292 | 0.452 | 0.75 | 2.12 | 3.28 |
| 2 | 0.2 | 0.389 | 0.602 | 1.0 | 4.35 | 6.73 |
| 2.5 | 0.2 | 0.487 | 0.753 | 1.25 | 7.60 | 11.8 |
| 3 | 0.2 | 0.584 | 0.903 | 1.5 | 12.0 | 18.6 |
| 4 | 0.2 | 0.778 | 1.20 | 2.0 | 24.6 | 38.1 |
| 5 | 0.2 | 0.973 | 1.51 | 2.5 | 43.0 | 66.5 |
| 6 | 0.2 | 0.17 | 1.81 | 3.0 | 67.8 | 105.0 |
| 8 | 0.2 | 0.56 | 2.413.01 | 4.0 | 139.0 | 214.0 |
| 10 | 0.2 | 1.95 | | 5.0 | 243.0 | 375.0 |

## Table O-4

### Minimum and Maximum Recommended Flow Rates for Free Flow Through Parshall Flumes

| Throat Width, W | Minimum Head, ft. | Minimum Flow Rate | | Maximum Head, ft. | Maximum Flow Rate | |
|---|---|---|---|---|---|---|
| | | MGD | CFS | | MGD | CFS |
| 1 in. | 0.07 | 0.003 | 0.005 | 0.60 | 0.099 | 0.153 |
| 2 in. | 0.07 | 0.007 | 0.011 | 0.60 | 0.198 | 0.306 |
| 3 in. | 0.10 | 0.018 | 0.028 | 1.5 | 1.20 | 1.86 |
| 6 in. | 0.10 | 0.035 | 0.054 | 1.5 | 2.53 | 3.91 |
| 9 in. | 0.10 | 0.05 | 0.091 | 2.0 | 5.73 | 8.87 |
| 1 ft. | 0.10 | 0.078 | 0.120 | 2.5 | 10.4 | 16.1 |
| 1.5 ft. | 0.10 | 0.112 | 0.174 | 2.5 | 15.9 | 24.6 |
| 2 ft. | 0.15 | 0.273 | 0.423 | 2.5 | 21.4 | 33.1 |
| 3 ft. | 0.15 | 0.397 | 0.615 | 2.5 | 32.6 | 50.4 |
| 4 ft. | 0.20 | 0.816 | 1.26 | 2.5 | 43.9 | 67.9 |
| 5 ft. | 0.20 | 1.00 | 1.55 | 2.5 | 55.3 | 85.6 |
| 6 ft. | 0.25 | 1.70 | 2.63 | 2.5 | 66.9 | 103 |
| 8 ft. | 0.25 | 2.23 | 3.45 | 2.5 | 90.1 | 139 |
| 10 ft. | 0.30 | 3.71 | 5.74 | 3.5 | 189 | 292 |
| 12 ft. | 0.33 | 5.13 | 7.93 | 4.5 | 335 | 519 |

## Table O-5

## Free-Flow Values of C and N for Parshall Flumes

## Based on the Relationship $Q = CWH^n$ (American Petroleum Institute 1969)

| Flume Throat, W | | C | n | Max. Q CFS |
|---|---|---|---|---|
| 1 | in. | 0.338 | 1.55 | 0.15 |
| 2 | in. | 0.676 | 1.55 | 0.30 |
| 3 | in. | 0.992 | 1.55 | 1.8 |
| 6 | in. | 2.06 | 1.58 | 3.9 |
| 9 | in. | 3.07 | 1.53 | 8.9 |
| 1 | ft. | 4W* | $1.522W^{0.026}$ | 16.1 |
| 1.5 | ft. | 4W* | $1.522W^{0.026}$ | 24.6 |
| 2 | ft. | 4W* | $1.522W^{0.026}$ | 33.1 |
| 3 | ft. | 4W* | $1.522W^{0.026}$ | 50.4 |
| 4 | ft. | 4W* | $1.522W^{0.026}$ | 67.9 |
| 5 | ft. | 4W* | $1.522W^{0.026}$ | 85.6 |
| 6 | ft. | 4W* | $1.522W^{0.026}$ | 103.5 |
| 7 | ft. | 4W* | $1.522W^{0.026}$ | 121.4 |
| 8 | ft. | 4W* | $1.522W^{0.026}$ | 139.5 |

Where, W = Flume throat width
Q = Flow (CFS)
C = Constant
N = Constant
H = Head upstream of the flume throat (feet)
* = W should be represented in feet to calculate C

**Table O-6**

**Minimum and Maximum Recommended Flow Rates for**
**Free Flow Through Plasti-Fab Palmer-Bowlus Flumes**

| D Flume Size (in.) | Maximum Slope for Upstream (%) | Minimum Head (ft.) | Minimum Flow Rate | | Maximum Head (ft.) | Maximum Flow Rate | |
|---|---|---|---|---|---|---|---|
| | | | MGD | CFS | | MGD | CFS |
| 6 | 2.2 | 0.11 | 0.023 | 0.035 | 0.36 | 0.203 | 0.315 |
| 8 | 2.0 | 0.15 | 0.048 | 0.074 | 0.49 | 0.433 | 0.670 |
| 10 | 1.8 | 0.18 | 0.079 | 0.122 | 0.61 | 0.752 | 1.16 |
| 12 | 1.6 | 0.22 | 0.128 | 0.198 | 0.73 | 1.18 | 1.83 |
| 15 | 1.5 | 0.27 | 0.216 | 0.334 | 0.91 | 2.06 | 3.18 |
| 18 | 1.4 | 0.33 | 0.355 | 0.549 | 1.09 | 3.24 | 5.01 |
| 21 | 1.4 | 0.38 | 0.504 | 0.780 | 1.28 | 4.81 | 7.44 |
| 24 | 1.3 | 0.44 | 0.721 | 1.12 | 1.46 | 6.70 | 10.4 |
| 27 | 1.3 | 0.49 | 0.945 | 1.46 | 1.64 | 8.95 | 13.8 |
| 30 | 1.3 | 0.55 | 1.26 | 1.95 | 1.82 | 11.6 | 18.0 |

**Table O-7**

**Coefficients of Discharge c for Venturi Meters**
**(King 1963)**

| Diameter of Throat, in. | Throat Velocity, ft. per sec. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 40 | 50 |
| 1 | 0.935 | 0.945 | 0.949 | 0.958 | 0.963 | 0.966 | 0.969 | 0.970 | 0.972 |
| 2 | 0.939 | 0.948 | 0.953 | 0.965 | 0.970 | 0.973 | 0.974 | 0.975 | 0.977 |
| 4 | 0.943 | 0.952 | 0.957 | 0.970 | 0.975 | 0.977 | 0.978 | 0.979 | 0.980 |
| 8 | 0.948 | 0.957 | 0.962 | 0.974 | 0.978 | 0.980 | 0.981 | 0.982 | 0.983 |
| 12 | 0.955 | 0.962 | 0.967 | 0.978 | 0.981 | 0.982 | 0.983 | 0.984 | 0.985 |
| 18 | 0.963 | 0.969 | 0.973 | 0.981 | 0.983 | 0.984 | 0.985 | 0.986 | 0.986 |
| 48 | 0.970 | 0.977 | 0.980 | 0.984 | 0.985 | 0.986 | 0.987 | 0.988 | 0.988 |

## Table O-8

## Values of K in Formula for Venturi Meters (King 1963)

| $\frac{d^2}{d^1}$ | K | $\frac{d^2}{d^1}$ | K | $\frac{d^2}{d^1}$ | K | $\frac{d^2}{d^1}$ | K | $\frac{d^2}{d^1}$ | K |
|---|---|---|---|---|---|---|---|---|---|
| 0.20 | 6.31 | 0.33 | 6.34 | 0.46 | 6.45 | 0.59 | 6.72 | 0.72 | 7.37 |
| 0.21 | 6.31 | 0.34 | 6.34 | 0.47 | 6.46 | 0.60 | 6.75 | 0.73 | 7.45 |
| 0.22 | 6.31 | 0.35 | 6.35 | 0.48 | 6.47 | 0.61 | 6.79 | 0.74 | 7.53 |
| 0.23 | 6.31 | 0.36 | 6.35 | 0.49 | 6.49 | 0.62 | 6.82 | 0.75 | 7.62 |
| 0.24 | 6.31 | 0.37 | 6.36 | 0.50 | 6.51 | 0.63 | 6.86 | 0.76 | 7.72 |
| 0.25 | 6.31 | 0.38 | 6.37 | 0.51 | 6.52 | 0.64 | 6.91 | 0.77 | 7.82 |
| 0.26 | 6.31 | 0.39 | 6.37 | 0.52 | 6.54 | 0.65 | 6.95 | 0.78 | 7.94 |
| 0.27 | 6.32 | 0.40 | 6.38 | 0.53 | 6.54 | 0.66 | 7.00 | 0.79 | 8.06 |
| 0.28 | 6.32 | 0.41 | 6.39 | 0.54 | 6.59 | 0.67 | 7.05 | 0.80 | 8.20 |
| 0.29 | 6.32 | 0.42 | 6.40 | 0.55 | 6.61 | 0.68 | 7.11 | 0.81 | 8.35 |
| 0.30 | 6.33 | 0.43 | 6.41 | 0.56 | 6.64 | 0.69 | 7.17 | 0.82 | 8.51 |
| 0.31 | 6.33 | 0.44 | 6.42 | 0.57 | 6.66 | 0.70 | 7.23 | 0.83 | 8.69 |
| 0.32 | 6.33 | 0.45 | 6.43 | 0.58 | 6.69 | 0.71 | 7.30 | 0.84 | 8.89 |

## Table O-9

## Advantages and Disadvantages of Secondary Devices

| Device | Advantages | Disadvantages |
|---|---|---|
| Hook Gauge | Common | Requires training to use, easily damaged |
| Stage Board | Common | Needs regular cleaning, difficult to read top of meniscus |
| Pressure Measurement | | |
| a. Pressure Bulb | Since no compressed air is used, source can be linked directly to sampler | Openings can clog, expensive |
| b. Bubbler Tube | Self-cleaning, less expensive, reliable | Needs compressed air or another air source |
| Float | Inexpensive, reliable | Catches debris, requires frequent cleaning to prevent sticking and changing buoyancy, and corroding hinges |
| Dipper | Quite reliable, easy to operate | Oil and grease foul probe, causing possible sensor loss |
| Ultrasonic | No electrical or mechanical contact | Errors from heavy turbulence and foam, calibration procedure is more involved than for other devices |

**Figure O-1.**

**Profile and Nomenclature of Sharp-Crested Weirs**
**(Associated Water and Air Resource Engineers, Inc., 1973)**

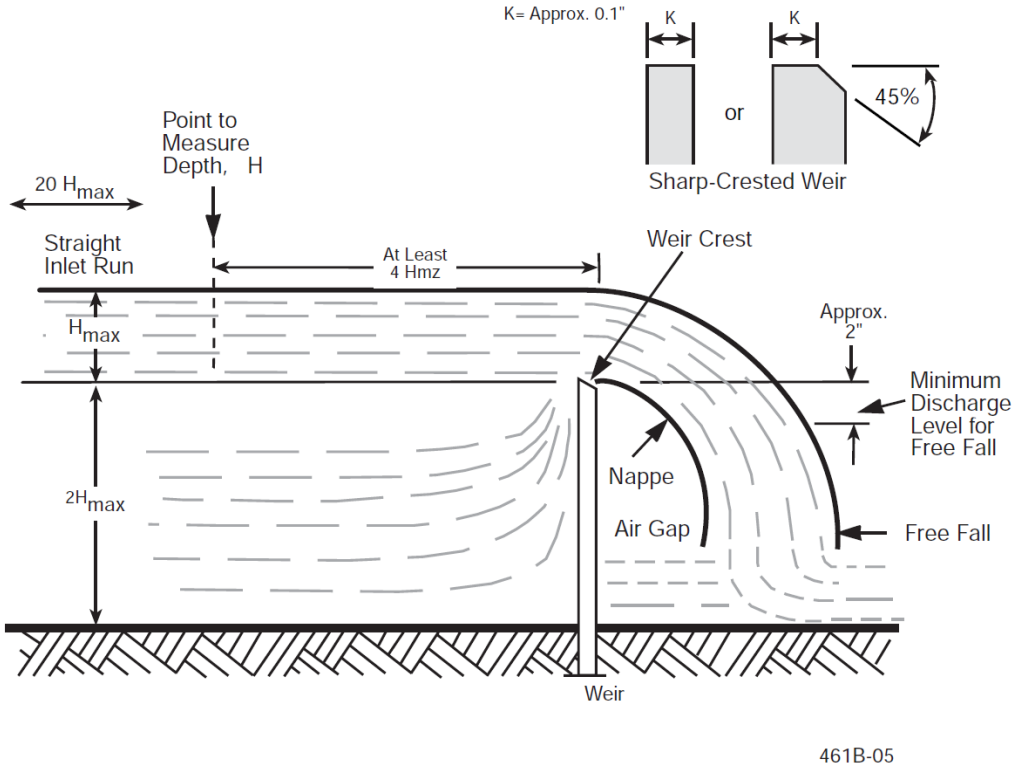


**Figure O-2.**

**Three Common Types of Sharp-Crested Weirs (Associated Water and Air Resource Engineers, Inc., 1973)**

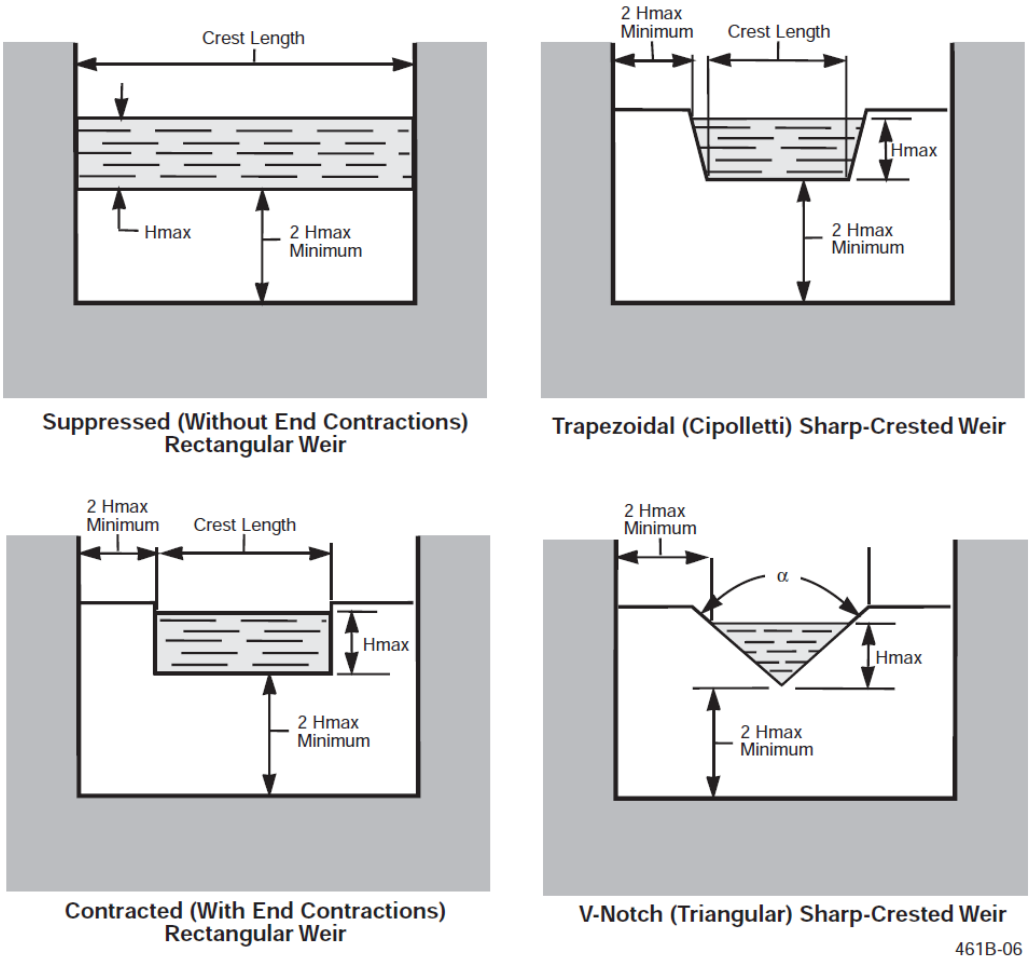


**Figure O-3.**

**Flow Rates for 60° and 90° V-Notch Weirs (Associated Water and Resource Engineers, Inc., 1973)**

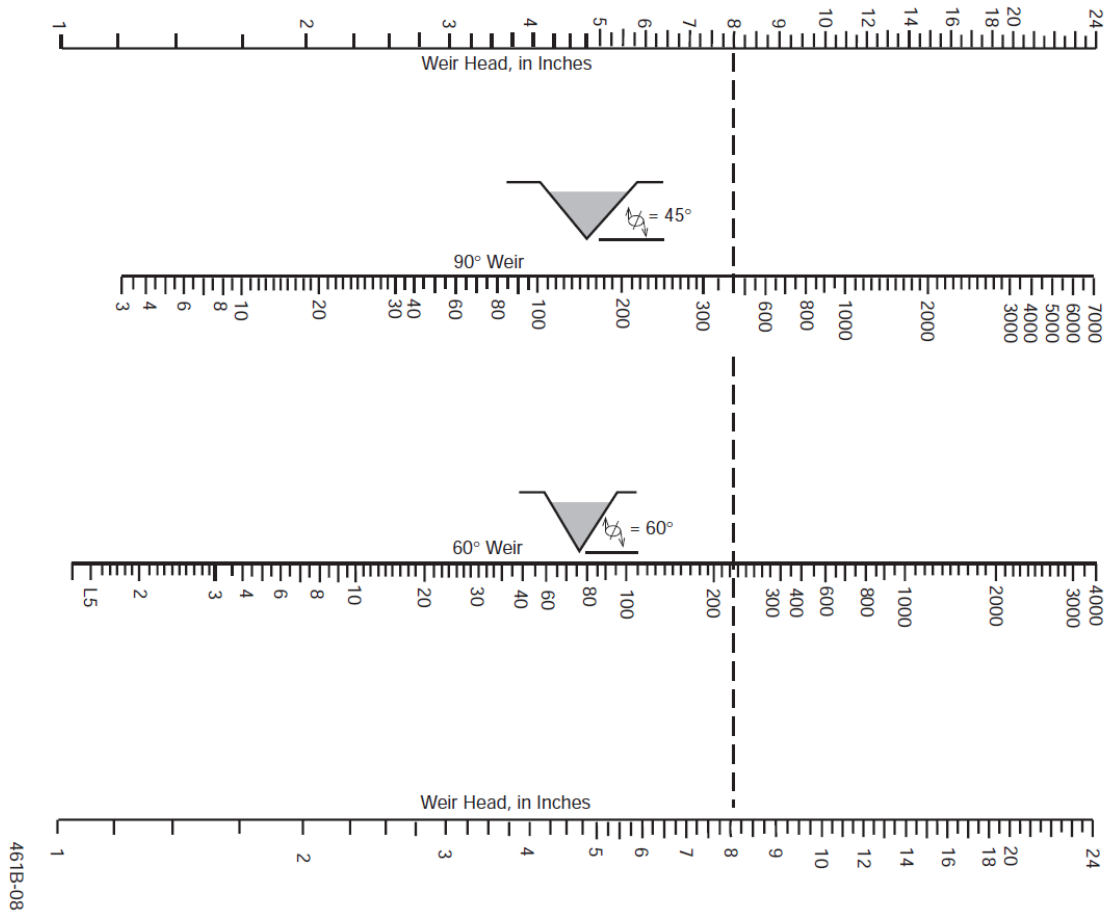


**Figure O-4.**

**Nomograph for Capacity of Rectangular Weirs (Associated Water and Air Resource Engineers, Inc., 1973)**

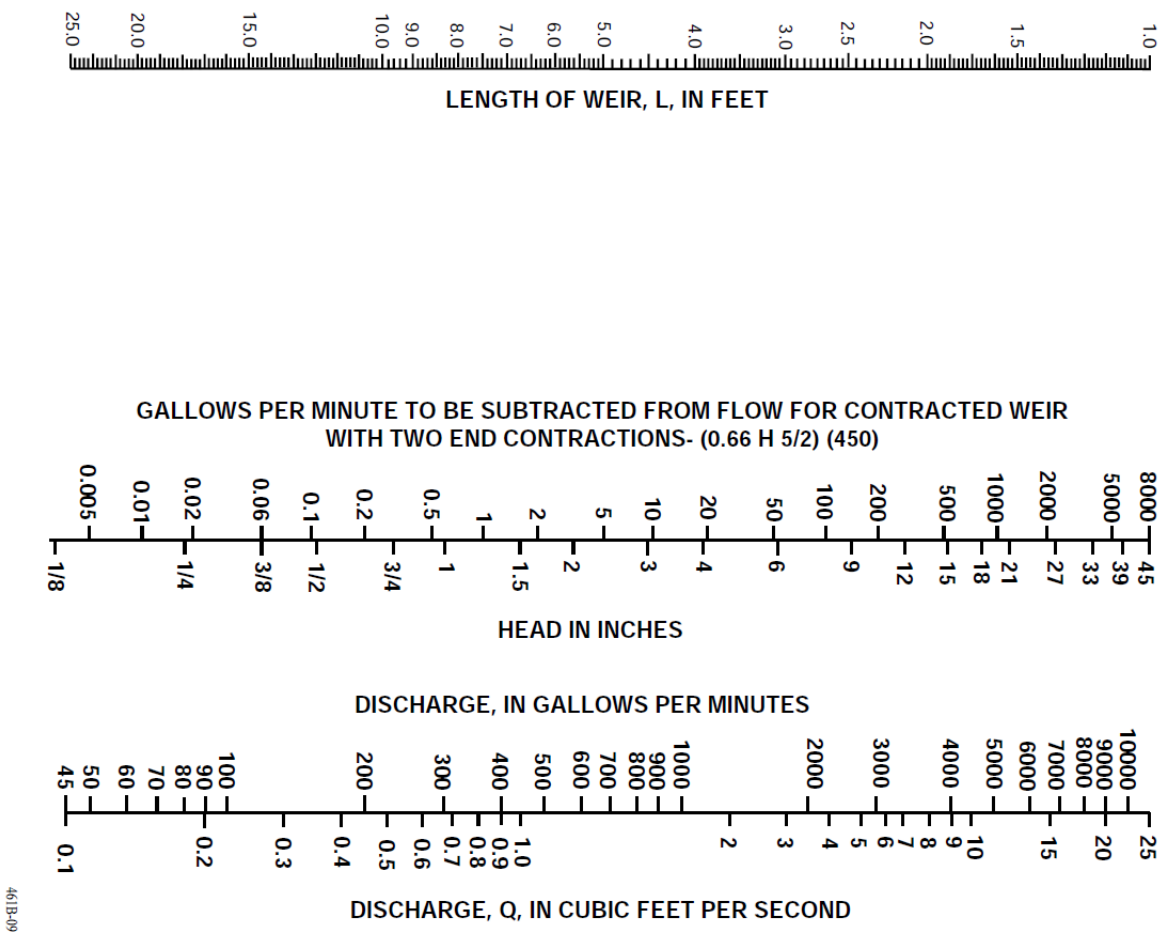


**Figure O-5.**

**Flow Curves for Parshall Flumes**
**(Associated Water and Air Resource Engineers, Inc., 1973)**

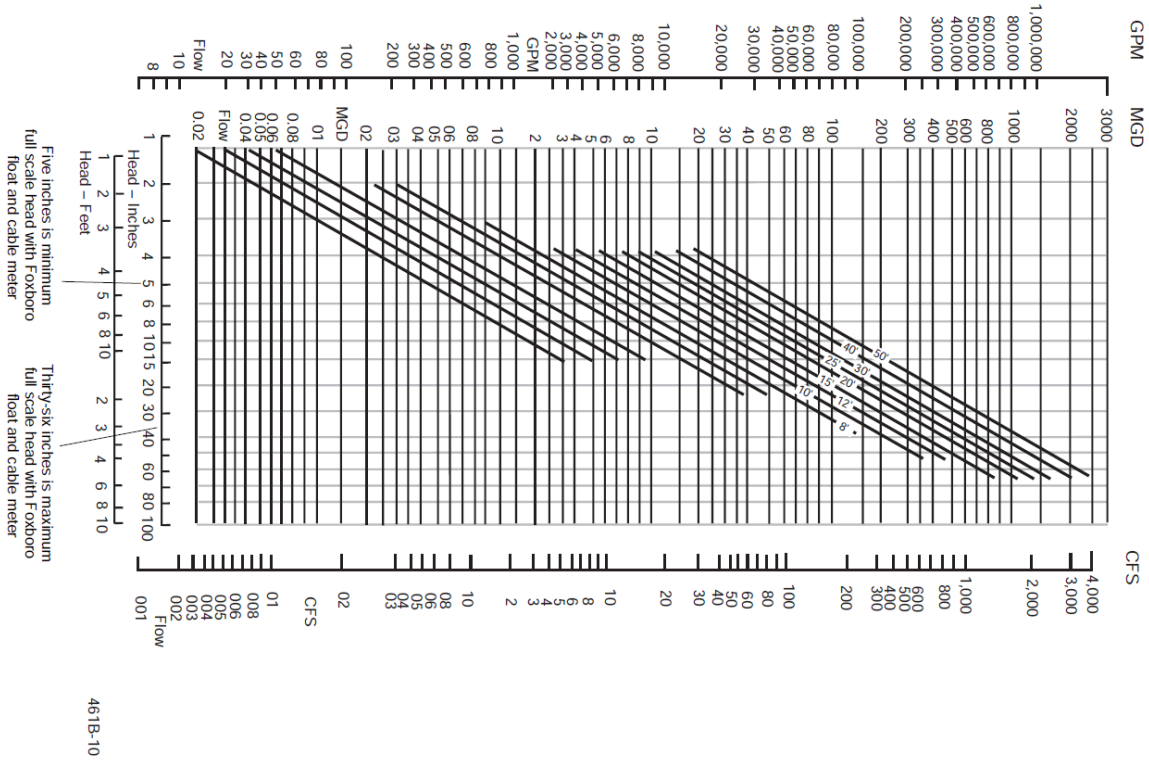
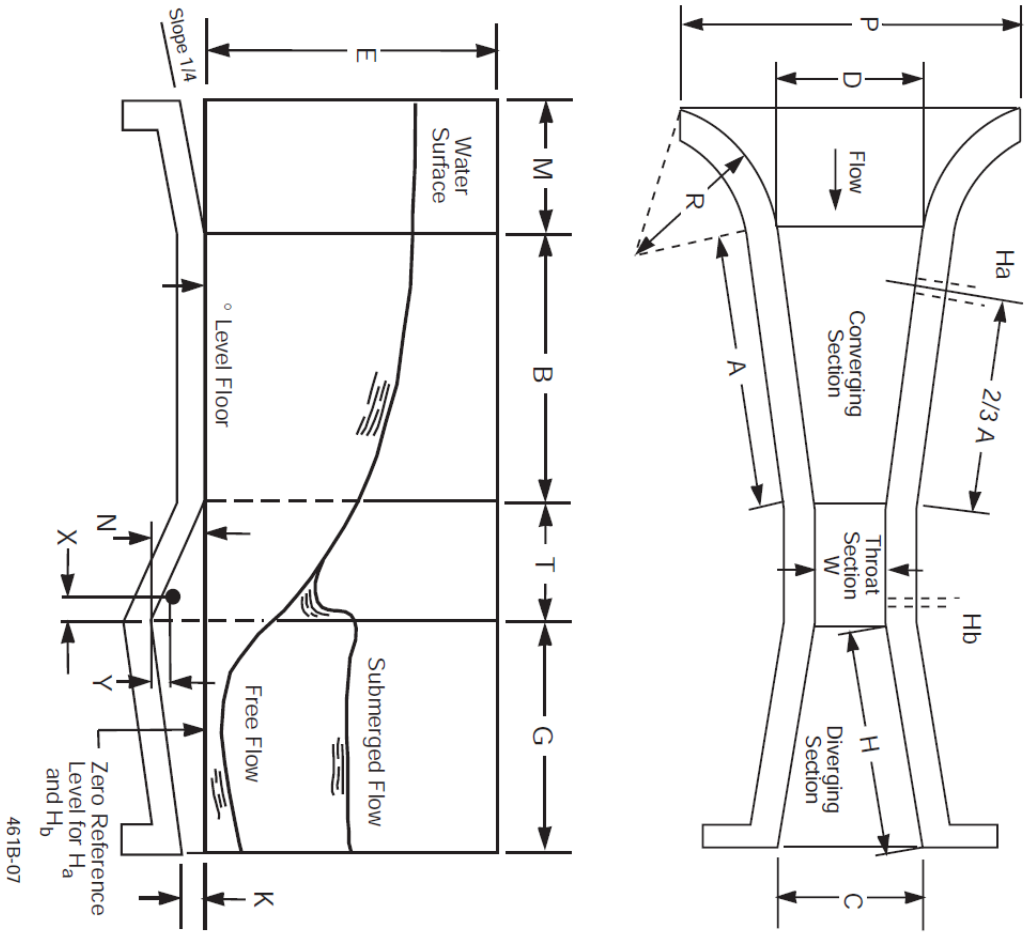


**Figure O-6.**

**Dimensions and Capacities of Parshall Measuring Flumes for Various Throat Widths (Associated Water and Air Resource Engineers, Inc., 1973)**



## Figure O-6.
## Dimensions and Capacities of Parshall Measuring Flumes for Various Throat Widths (continued)

| W | | A | | ⅔A | | B | | C | | D | | E | | T | | G | | H | | K | M | | N | | P | | R | | X | Y | Free-Flow Capacity (Second-Foot*) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | Ft. | In. | In. | In. | Ft. | In. | Ft. | In. | Ft. | In. | In. | In. | Mini-mum | Maxi-mum |
| 0 | 3 | 1 | 6⅜ | 1 | ¼ | 1 | 6 | 0 | 7 | 0 | 10 3/16 | 1-1½ | 0 | 0 | 6 | 1 | 0 | 1 | 5/32 | 1 | 0 | 0 | 2¼ | 0 | 0 | 0 | 0 | 1 | 1½ | 0.03 | 1.9 |
| 0 | 6 | 2 | 7/16 | 1 | 4 5/16 | 2 | 0 | 1 | 3½ | 1 | 3⅝ | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 1 | 0 | 4½ | 2 | 11½ | 1 | 4 | 2 | 3 | 0.05 | 3.9 |
| 0 | 9 | 2 | 10⅝ | 1 | 11⅛ | 2 | 10 | 1 | 3 | 1 | 10⅝ | 2 | 6 | 1 | 0 | 1 | 6 | 0 | 0 | 3 | 1 | 0 | 4½ | 3 | 6½ | 1 | 4 | 2 | 3 | 0.09 | 8.9 |
| 1 | 0 | 4 | 6 | 3 | 0 | 4 | 4⅞ | 2 | 0 | 2 | 9¼ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 3 | 9 | 4 | 10¾ | 1 | 8 | 2 | 3 | 0.11 | 16.1 |
| 1 | 6 | 4 | 9 | 3 | 2 | 4 | 7⅞ | 2 | 6 | 3 | 4⅜ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 3 | 9 | 5 | 6 | 1 | 8 | 2 | 3 | 0.15 | 24.6 |
| 2 | 0 | 5 | 0 | 3 | 4 | 4 | 10⅞ | 3 | 0 | 3 | 11½ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 3 | 9 | 6 | 1 | 1 | 8 | 2 | 3 | 0.42 | 33.1 |
| 3 | 0 | 5 | 6 | 3 | 8 | 5 | 4¾ | 4 | 0 | 5 | 17⅞ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 3 | 9 | 7 | 3½ | 1 | 8 | 2 | 3 | 0.61 | 50.4 |
| 4 | 0 | 6 | 0 | 4 | 0 | 5 | 10⅝ | 5 | 0 | 6 | 4¼ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 6 | 9 | 8 | 10¾ | 2 | 0 | 2 | 3 | 1.30 | 67.9 |
| 5 | 0 | 6 | 6 | 4 | 4 | 6 | 4½ | 6 | 0 | 7 | 6⅝ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 6 | 9 | 10 | 1¼ | 2 | 0 | 2 | 3 | 1.60 | 85.6 |
| 6 | 0 | 7 | 0 | 4 | 8 | 6 | 10⅜ | 7 | 0 | 8 | 9 | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 6 | 9 | 11 | 3½ | 2 | 0 | 2 | 3 | 2.60 | 103.5 |
| 7 | 0 | 7 | 6 | 5 | 0 | 7 | 4¼ | 8 | 0 | 9 | 11⅜ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 6 | 9 | 12 | 6 | 2 | 0 | 2 | 3 | 3.00 | 121.4 |
| 8 | 0 | 8 | 0 | 5 | 4 | 7 | 10⅛ | 9 | 0 | 11 | 1¾ | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 6 | 9 | 13 | 8¼ | 2 | 0 | 2 | 3 | 3.50 | 139.5 |

*Equals 1 cu. ft. per sec.

**LEGEND:**

W Width of flume throat.
A Length of side wall of converging section.
⅔A Distance back from end of crest to gauge point.
B Axial length of converging section.
C Width of downstream end of flume.
D Width of upstream end of flume.
E Depth of flume.
T Length of flume throat.
G Axial length of diverging section.
H Length of side wall of the diverging section.
K Difference in elevation between lower end of flume and crest.
M Length of approach floor.
N Depth of depression in throat below crest.
P Width between ends of curved wing walls.
R Radius of curved wing wall.
X Horizontal distance to $H_b$ gauge point from low point in throat.
Y Vertical distance to $H_b$ gauge point from low point in throat.

**Figure O-7.**

**Effect of Submergence on Parshall Flume Free Discharge (Civil Engineering, ASCE)**

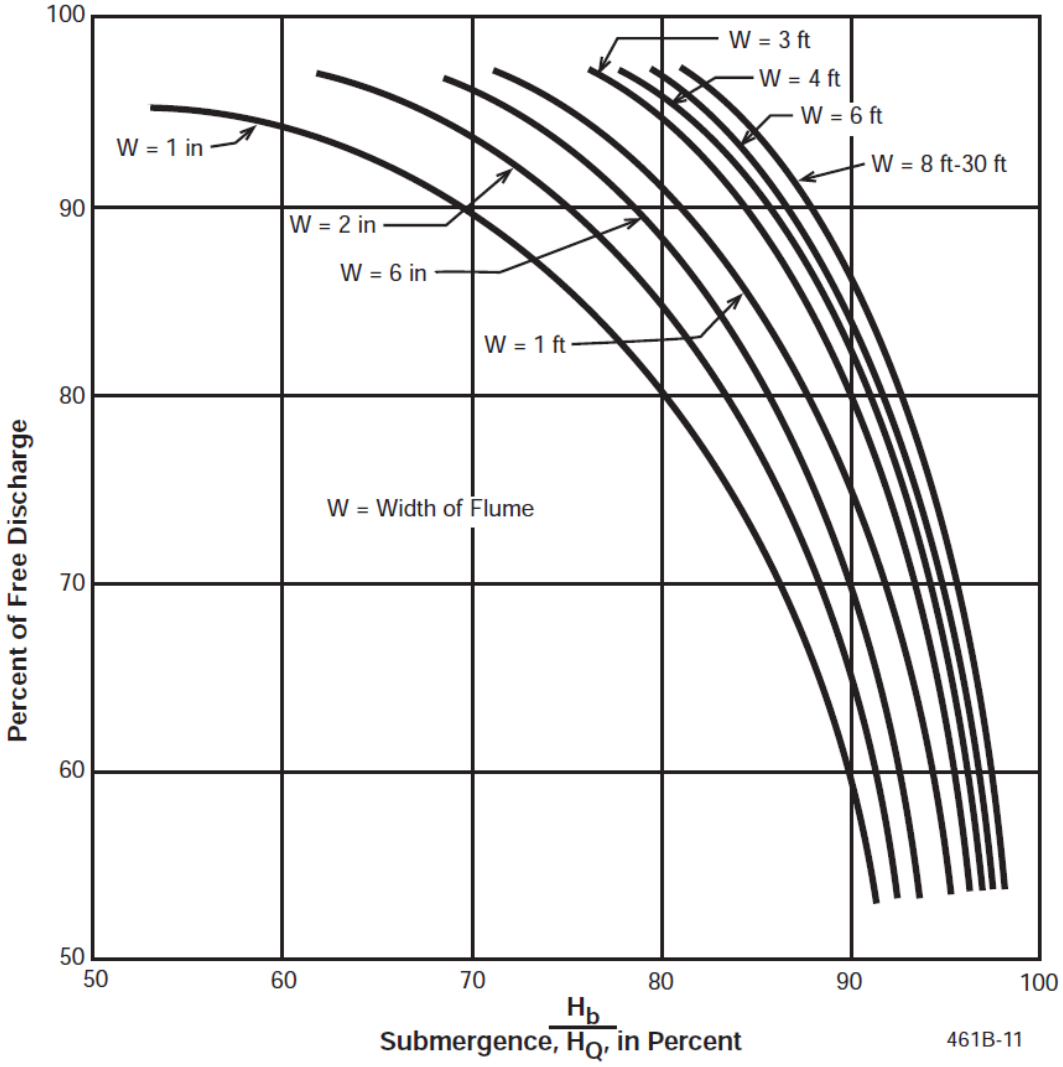


**Figure O-8.**

**Free-Flowing Palmer-Bowlus Flume**

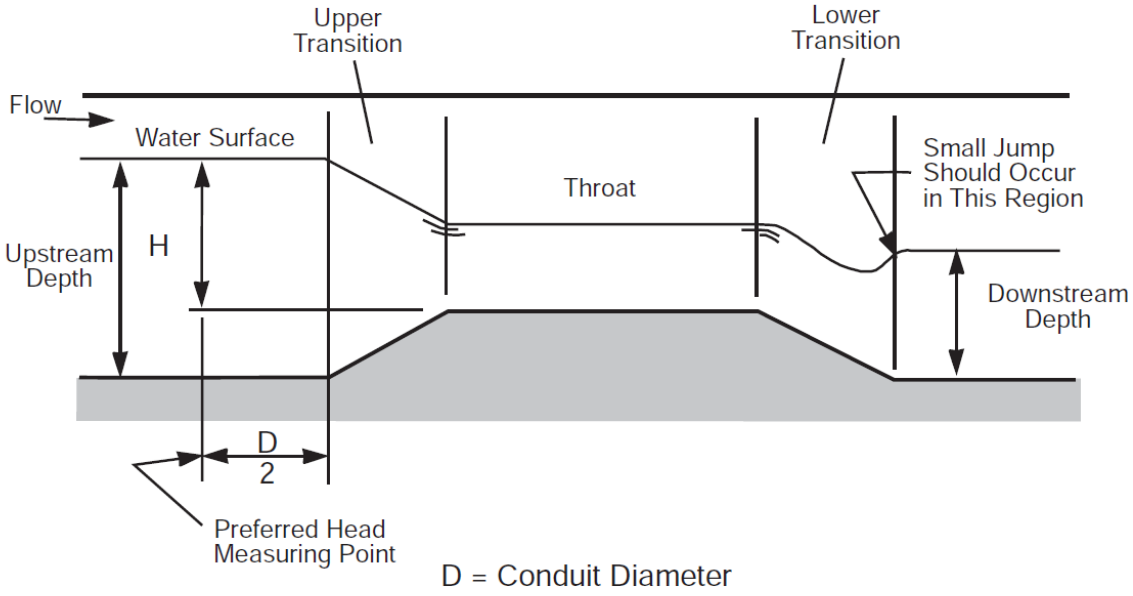


**Figure O-9.**
**Configuration and Nomenclature of Venturi Meter**

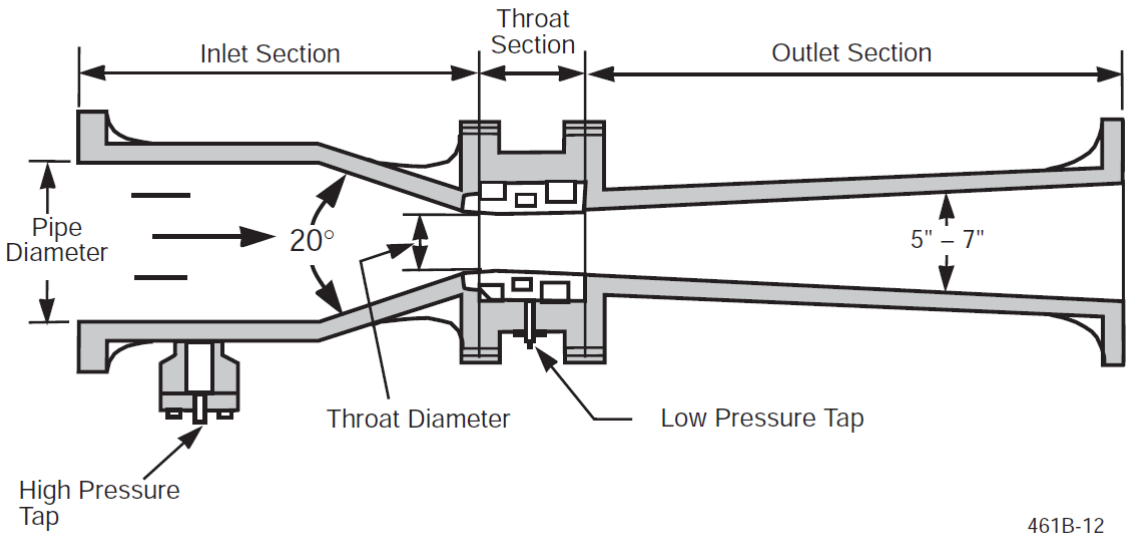


**Figure O-10.**
**Electromagnetic Flowmeter**

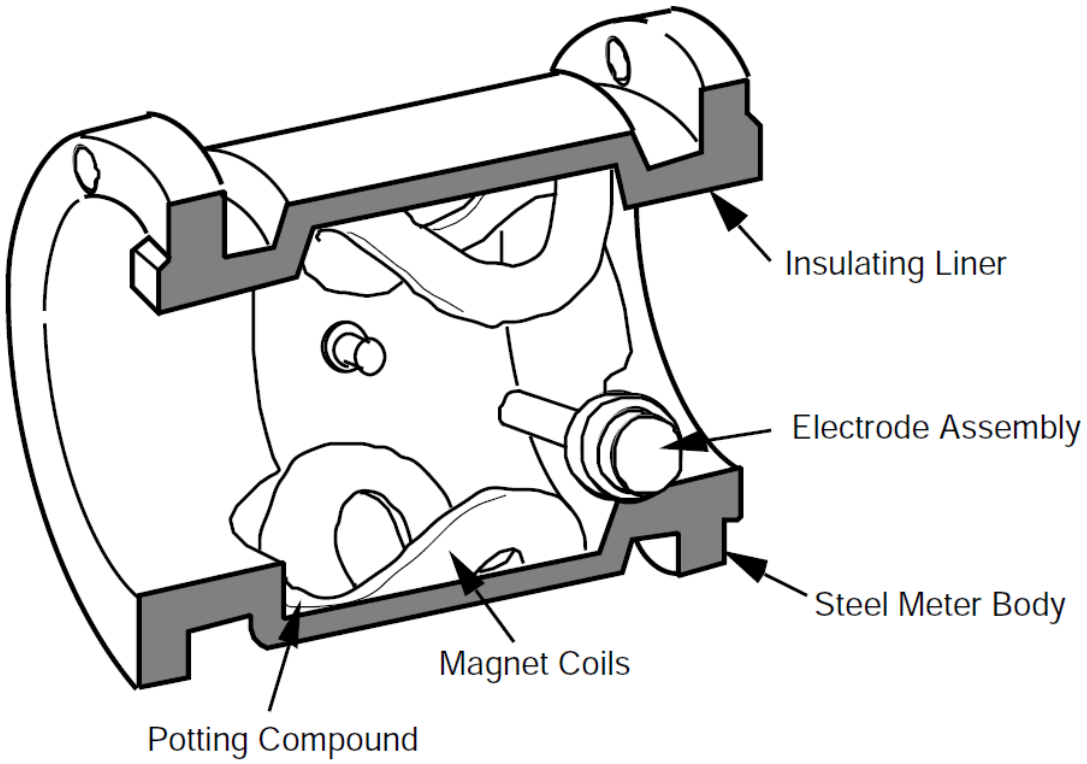


**Figure O-11.**
**Propeller Flowmeter**

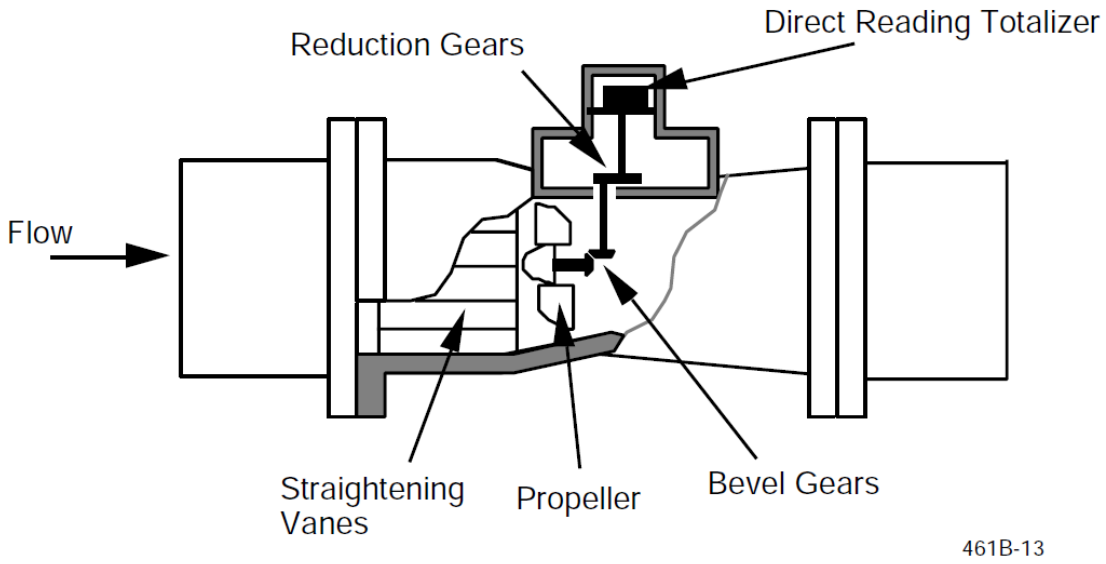
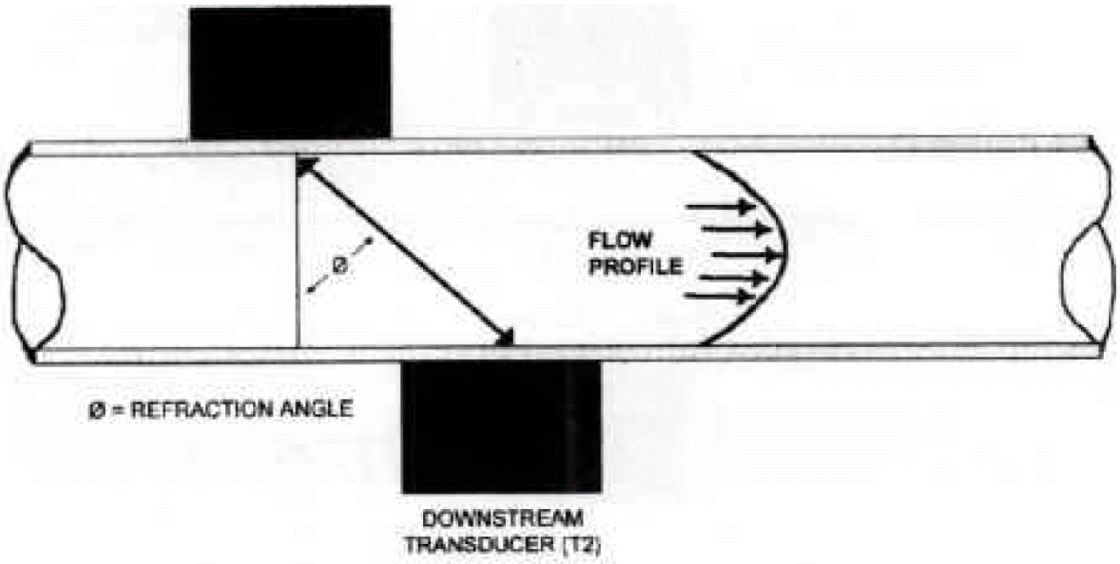


**Figure O-12.**
**Transit-Time Flowmeter**



# Appendix P –
# Sludge Inspection Checklists

## Sludge Inspection Checklist

| | |
|---|---|
| Yes No N/A | 1. Are 40 CFR Part 503 sludge use and disposal requirements contained in a current NPDES permit, in a separate "sludge only" NPDES permit, in a RCRA Subtitle C permit, or in a CAA permit? [503.3(a)(1) or (2) (1)] |
| Yes No N/A | 2. Sludge use and disposal practice(s):<br>a. Land Application ____ [503.10]<br>Bulk Sewage Sludge ____ [503.11(e)]<br>Bulk Material Derived from Sewage Sludge ____ [503.11(e)]<br>Or<br>Sold or Given Away in a Bag or Another Container ____ [503.11(e)] |
| Yes No N/A | b. Surface Disposal ____ [503.20] |
| Yes No N/A | c. Sewage Sludge Incineration ____ [503.40] |
| Yes No N/A | d. Onsite or Offsite Storage ____ [503.9(y)]<br>Date storage began ____ ended ____<br>(Maximum time allowed: 2 years from February 19, 1993) |
| Yes No N/A | e. Other (list)_____ |
| Yes No N/A | 3. Each sludge use or disposal practice is permitted? [503.3(a)(1) (1)] |
| Yes No N/A | 4. Notification is given to EPA/State of new or different sludge disposal method? (Permit) |
| Yes No N/A | 5. Number and location of disposal sites/activities are as described in the permit or fact sheet or land application plan (40 CFR Part 501)? [Permit] |
| Comments: | |
| | |
| Yes No N/A | 1. Self-monitoring data are available for all regulated pollutants? [503.17], [503.27], [503.43] |
| Yes No N/A | 2. Pathogen and vector attraction reduction method description and certification statement(s) available? [503.17], [503.27] |
| Yes No N/A | 3. Records are available for each applicable use or disposal practice? [503.17], [503.27], [503.47] |
| Yes No N/A | 4. Accurate records of sludge volume or mass are maintained, where appropriate? [503.25], [503.47] |
| Yes No N/A | 5. Monitoring and analyses are performed more often than required by permit? If so, results are reported in the permittee's self-monitoring report? [Permit] |
| Yes No N/A | 6. Unit operations records verify compliance with pathogen and vector attraction reduction requirements, where appropriate? [503.15], [503.25] |
| Yes No N/A | 7. Self-monitoring is conducted at the frequency specified in the permit, in 503.16 Table 1 (land application), or in 503.26 Table 1 (surface disposal)? [503.16], |

## Sludge Inspection Checklist

| | |
|---|---|
| | [503.26] or [503.46] Table 1. Production-dependent – 0-289 mtpy: 1/yr., 290-1499 mtpy: 1/qtr., 1500-14999 mtpy: ½ mo., 15000 mtpy and greater, 1/mo.) mtpy-metric ton per year |
| Yes No N/A | 8. Facility reports sludge monitoring data at the frequency specified in the permit? (Only for Class I facilities or POTWs with either total design flow >1 mgd or serving population >10,000) [503.18], [503.28], [503.48] |
| Yes No N/A | 9. Sludge records are maintained for at least 5 years? [503.17], [503.27], [503.47] |
| Yes No N/A | 10. Sludge data are reported on Discharge Monitoring Report (DMR) or approved form? [Permit] |
| Yes No N/A | 11. Sludge records are adequate to assess compliance with annual and/or cumulative pollutant loading rates or other established permit limits? [503.13(a) (2) (i), 503.13(a) (4) (ii)] |
| Comments: | |
| | |
| Yes No N/A | 1. Sludge samples are taken at locations specified in the permit? [Permit] |
| Yes No N/A | 2. Sludge sample locations are appropriate for obtaining representative samples? [503.8(a) |
| Yes No N/A | 3. Sampling and analysis are conducted for parameters specified in the permit or in 40 CFR Part 503? [Permit], [503.13], [503.23], [503.46] |
| | 4. Sample collection procedures: |
| Yes No N/A | a. Adequate sample volumes are obtained? |
| Yes No N/A | b. Proper preservation techniques are used? |
| Yes No N/A | c. Containers conform to appropriate analytical method specified in 40 CFR Part 503.8? |
| Yes No N/A | d. Samples analyzed in the appropriate time frames in accordance with 40 CFR Part 503.8? |
| Yes No N/A | 5. Are results reported on a dry weight basis? [503.13], [503.23], [503.43]<br>(Dry weight concentration =<br>Wet weight concentration/Decimal fraction of solids)<br>e.g., A sludge containing 20 mg/l Cu and having 5% solids.<br>Dry weight Cu (mg/kg) = $\frac{20\ mg/1}{0.05}$ = 400 mg/kg |
| Yes No N/A | 6. Sample is refrigerated subsequent to compositing? |
| Yes No N/A | 7. Chain-of-custody procedures are employed? |
| Yes No N/A | 8. Analytical methods used are approved methods in 40 CFR Part 503.8 or updated methods specified for Part 503 compliance? |

## Sludge Inspection Checklist

| | |
|---|---|
| Comments: | |
| | |
| | |
| Yes No N/A | 1. Sludge process control parameters maintained as appropriate? |
| Yes No N/A | 2. Adequate equipment redundancy (e.g., back-up units)? |
| Yes No N/A | 3. Adequate sludge storage capacity? |
| Yes No N/A | 4. Contingency plan for sludge disposal practice? |
| Yes No N/A | 5. Solids handling operation adequate to manage volume of sludge? |
| Comments: | |
| | |
| Yes No N/A | 1. Is primary unstabilized sludge fed to the thickener, centrifuge or drying bed? If yes, list percentage of unstabilized sludge _____ |
| Yes No N/A | 2. What is the average % solids of the sludge before thickening, drying or centrifuging? _____ % after? _____ % |
| Yes No N/A | 3. Is sludge mixed with other materials before or after thickening? |
| Yes No N/A | 4. For sludge containing unstabilized solids, is the percent solids greater than 90% prior to mixing with other materials? |
| Yes No N/A | 5. For sludge containing no unstabilized solids, is the percent solids greater than 75% prior to mixing with other materials? |
| Comments: | |
| | |
| | 1. Sludge fed to digester(s) includes: ___Primary ___Secondary ___Combined |
| | 2. Digester(s) operating mode: ___high rate ___ low rate |
| Yes No N/A | 3. Digester(s) are operated at proper temperature [mesophilic: 95°F (35°C) and thermophilic: 131°F (55°C)? |
| | List operating mode: ___ mesophilic ___ thermophilic |
| Yes No N/A | 4. Temperature monitoring location and frequency sufficient to demonstrate compliance with Class B pathogen reduction requirements for PSRP? |
| | Average Temperature: ____°C or °F |

## Sludge Inspection Checklist

| | |
|---|---|
| Yes No N/A | 5. Solids Retention Time (SRT) or Mean Cell Residence time (MCRT) calculated properly? * |
| Yes No N/A | 6. SRT or MCRT sufficient to demonstrate compliance with Class B pathogen reduction requirements for PSRP?<br>Average SRT or MCRT: ____days<br>*For batch operated digesters with no recycle:<br>SRT or MCRT = Mass of solids in digester, kg<br>Solids removed, kg/day<br>This formula can be used to estimate SRT or MCRT for all digester systems. For calculating SRT or MCRT for other system configurations, use the WEF Manual of Practice or other references. Always write down the calculation used by the facility no matter what the configuration is. |
| Comments: | |
| | |
| | 1. Sludge fed to digester(s) includes:<br>___Primary ___Secondary ___Combined |
| | 2. Digester(s) operating mode: ___high rate ___ low rate |
| Yes No N/A | 3. Digester(s) are operated at proper temperature [cryophilic: <50°F (<10°C), mesophilic: 50-108°F (10-42°C), and thermophilic: >108°F (42°C)?<br>List operating mode:<br>___ cryophilic ___ mesophilic ___ thermophilic |
| Yes No N/A | 4. Temperature monitoring location and frequency sufficient to demonstrate compliance with Class B pathogen reduction requirements for PSRP or with Class A pathogen reduction requirements for PFRP (Thermophilic aerobic digestion only)?<br>Average Temperature: ____°C or °F |
| Yes No N/A | 5. Solids Retention Time (SRT) or Mean Cell Residence time (MCRT) calculated properly? * |
| Yes No N/A | 6. SRT or MCRT sufficient to demonstrate compliance with Class B pathogen reduction requirements for PSRP or with Class A pathogen reduction requirements for PFRP (Thermophilic digestion only)?<br>Average SRT or MCRT: ____days |
| Yes No N/A | 7. Aerobic conditions verified through dissolved oxygen monitoring?<br>*For batch operated digesters with no recycle:<br>SRT or MCRT = Mass of solids in digester, kg<br>Solids removed, kg/day<br>This formula can be used to estimate SRT or MCRT for all digester systems. For calculating SRT or MCRT for other system configurations, use the WEF Manual of |

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| | | | Practice or other references. Always write down the calculation used by the facility no matter what the configuration is. |
| Comments: | | | |
| | | | |
| | | | 1. Type of composting performed:<br>____ In vessel ____ Static piles ____ Windrows |
| | | | 2. Type of sludge composted:<br>____ Primary ____ Secondary ____ Combined |
| Yes | No | N/A | 3. Is the moisture content monitored? |
| Yes | No | N/A | 4. Is compost mixed? Method? _____<br>Frequency of turnings? _____ |
| Yes | No | N/A | 5. Is oxygen content monitored? |
| Yes | No | N/A | 6. Is temperature monitored? |
| Yes | No | N/A | 7. Are total and total volatile solids monitored? |
| | | | 8. Active phase ____ days<br>Curing phase ____ days |
| Yes | No | N/A | 9. Is site runoff treated? Where? _____ |
| Yes | No | N/A | 10. Temperature monitoring location and frequency sufficient to demonstrate compliance with Class B pathogen reduction requirements for PSRP or with Class A pathogen reduction requirements for PFRP? |
| Yes | No | N/A | 11. Temperature and/or oxygen monitoring sufficient to determine compliance with vector attraction reduction requirements? |
| Comments: | | | |
| | | | |
| Yes | No | N/A | 1. Sewage sludge or material derived from sewage sludge is land applied to: |
| | | | Agricultural Land _____ Forest _____<br>Reclamation Site _____ Lawn or Home Garden _____<br>Public Contact Site (Park, etc.) _____ |
| Yes | No | N/A | 2. Do monitoring results show pollutant concentrations below values shown in Table 1 in 40 CFR Part 503.13(b)(1)? [Part 503.13(a)(1)[2] |
| Yes | No | N/A | 3. Do monitoring results show pollutant concentrations below values shown in 40 CFR Part 503.13(b)(3)?[3] |
| | | | 4. Classifications of Sewage Sludge with respect to Pathogens: [503.30][4]<br>Class A _____ Class B _____ Unknown _____ |
| Yes | No | N/A | 5. Are Class A Pathogen reduction requirements met? [503.15(a) [4] |

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| | | | 6. Indicate which method is used to meet Class A requirements: [503.32(a)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and Time/Temperature requirements. [503.32(a)(3)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and pH requirements. [503.32(a)(4)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and enteric viruses or helminth ova reduction requirements. [503.32(a)(5)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and enteric viruses or helminth ova density requirements. [503.32(a)(6)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and Process to Further Reduce Pathogens (PFRP). [503.32(a)(7) and [503 Appendix B] (5)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and equivalent PFRP. [503.32(a)(8) and [503 Appendix B] (5) |
| Yes | No | N/A | 7. Are Class B Pathogen reduction requirements met? [503.32(b) [4] |
| | | | 8. Indicate which method(s) is used to meet Class B requirements:<br>___ Geometric mean of seven Fecal Coliform samples with <2,000,000 MPN/g total solids or <2,000,000 Colony Forming Units/g total solids. [503.32(b)(2)<br>___ Treated by Process to Significantly Reduce Pathogens (PSRP). [503.32(b)(3) and [503 Appendix B] [5]<br>Treated by equivalent PSRP. [503.32(b)(4) and [503 Appendix B] [5] |
| Yes | No | N/A | 9. For Class B sludge which is land applied, are Site Restrictions practiced? [503.32 (b)(5) (4) |
| Yes | No | N/A | 10. Indicate Site Restrictions practiced where applicable: |
| | | | ___ Food crops (above ground) are harvested >14 months after application of sewage sludge? [503.32(b)(5)(i)<br>___ Food Crops (below ground) are harvested >20 months after application of sewage sludge when sludge stays on land for >4 months prior to incorporation into soil? [503.32(b)(5)(ii)<br>___ Food Crops (below ground) are harvested >38 months after application of sewage sludge when sludge stays on land for <4 months prior to incorporation into soil? [503.32(b)(5)(iii)<br>___ Food Crops, feed crops, and fiber crops are harvested >30 days after application of sewage sludge? [503.32(b)(5)(iv)<br>___ Animal grazing allowed on land only >30 days after application of sewage sludge? [503.32(b)(5)(v)<br>___ Turf grown on land where sewage sludge was applied placed on high public expose land or lawn is harvested >1 year after application of sewage sludge? [503.32(b)(5)(vi)<br>___ Public access is restricted to land with a potential for high public exposure for 1 year? [503.32(b)(5)(vii) |

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| | | | ___ Public access is restricted to land with a potential for low public exposure for 30 days? [503.32(b)(5)(viii) |
| Yes | No | N/A | 11. Is a Vector Attraction Reduction method practiced? [503.15(c) (6) |
| Yes | No | N/A | 12. Indicate Vector Attraction Reduction method: [503.33(b) |
| | | | ___ 38% Volatile Solids Reduction. [503.33(b)(1) (7) |
| | | | ___ 40-day test - Volatile Solids reduced <17%. [503.33(b)(2) (Anaerobic Digestion Only) |
| | | | ___ 30-day test - Volatile Solids reduced <15%. [503.33(b)(3) (Aerobic Digestion Only) |
| | | | ___ Specific Oxygen Uptake Rate (SOUR) <1.5 mg/hr./gm TS @ 20°C. [503.33(b)(4) |
| | | | ___ Aerobic Process for >14 days @ >40°C with average sludge temperatures >45°C. [503.33(b)(5) |
| | | | ___ pH >12 for 2 hours and pH >11.5 for 22 hours [503.33(b)(6) |
| | | | ___ Sludge (with no unstabilized solids) contains >75% Total Solids prior to mixing with other materials. [503.33(b)(7) |
| | | | ___ Sludge (contains unstabilized solids) contains >90% Total Solids prior to mixing with other materials. [503.33(b)(8) |
| | | | ___ Subsurface Injection. [503.33(b)(9) |
| | | | ___ Soil Incorporation. [503.33(b)(10) |
| Yes | No | N/A | 13. Are general requirements (503.12) and management practices (503.14) applied for sludge not meeting Table 3 pollutant concentrations, Class pathogen reduction requirements, and vector attraction reduction methods? [503.10], [503.12], [503.14] |
| Yes | No | N/A | 14. Indicate management practices where applicable:<br>___ No threatened or endangered species present or critical habitat affected at the location(s) where bulk sludge is applied.<br>___ Bulk sludge not applied to frozen or snow covered ground.<br>___ Bulk sludge applied >10 meters from waters of the U.S.<br>___ Bulk sludge applied at a rate equal to or less than agronomic rate.<br>___ Label affixed on bag or information sheet provided to user of sold and given away sludge indicating name of sludge preparer, application instructions, and maximum annual whole sludge application rate. |
| Yes | No | N/A | 15. Indicate general requirements practiced where applicable: |
| | | | ___ Sludge is not applied to a site where the cumulative pollutant loading or annual application rate has been reached. |
| | | | ___ Notification given to the sludge applier regarding total nitrogen content of the sludge. |
| | | | ___ Sufficient information required to comply with 40 CFR Part 503 is given to preparers/appliers/land owners. |

## Sludge Inspection Checklist

| | |
|---|---|
| | ___ Written notification given to permitting authority (including States) regarding the location of land application sites, appropriate NPDES permit numbers. |
| Yes No N/A | 16. Description of how management practices are met for each land application site available? |
| Comments: | |

Land Application Footnotes:

(1) Permits are not required. Part 503 is self-implementing. Part 503 does not cover industrial sludges or grit and screenings.

(2) 503.13(b)(1), Table 1 values must be met to land apply sludge:

Table 1 (mg/kg):

| | | | | | |
|---|---|---|---|---|---|
| Arsenic | 75 | Lead | 840 | Nickel | 420 |
| Cadmium | 85 | Mercury | 5757 | Selenium | 100 |
| Copper | 4300 | Molybdenum | 75 | Zinc | 7500 |

(3) 503.13(b)(3), Table 3 must be met for any sludge applied to a lawn or home garden. For bulk sludge, Table 3 must be met or the sludge is subject to cumulative loading limits in 503.13(b)(2). For sewage sludge sold and given away in a bag or other container, Table 3 must also be met or the sludge is subject to annual pollutant loadings in 503.13(b)(4). This also signals that additional recordkeeping requirements of 503.12 and 503.17 apply.

Table 2 (mg/kg):

| | | | | | |
|---|---|---|---|---|---|
| Arsenic | 41 | Lead | 300 | Selenium | 100 |
| Cadmium | 39396 | Mercury | 17 | Zinc | 2800 |
| Copper | 1500 | Nickel | 420 | | |

(4) Class A requirements must be met when bulk sludge is land applied to a lawn or home garden, or when sewage sludge is sold or given away in a bag or another container. Also, Class A requirements or Class B requirements combined with appropriate site restrictions must be met for when bulk or bulk material derived from sludge is applied to agricultural land, reclamation site, forest, or public contact site.

(5) Process to Significantly Reduce Pathogens (PSRP) includes Aerobic Digestion, Air Drying, Anaerobic Digestion, Composting, and Lime Stabilization. Process to Further Reduce Pathogens (PFRP) includes Composting, Heat Drying, Heat Treatment, Thermophilic Aerobic Digestion, Beta Ray Irradiation, Gamma Ray Irradiation, and Pasteurization. Each process has required operating conditions to demonstrate compliance. See 503 Appendix B and Unit Process Checklists.

(6) One of the methods 503.33(b)(1)-(10) must be used when land applying bulk sewage sludge to agricultural land, forest, a public contact site, or a reclamation site. One of the methods 503.33(b)(1)-(8) must be met when land applying bulk sludge to a lawn or home garden, or when sewage sludge or derived material is sold or given away in a bag or another container.

(7) Volatile solids reduction through the sludge treatment train [only] is generally calculated using the Van Kleek equation. following general formula:

$$\% \text{ VS Reduction} = \frac{(\text{Mass of solids in, kg} \times \text{Mass of solids out, kg}) \times 100}{\text{Mass of solids in, kg}}$$

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| Other Variations of this formula are presented in the document Environmental Regulations and Technology-Control of Pathogens and Vector Attraction in Sewage Sludge, EPA-625/R-92/013. See document for specific calculations. Website: http://www.epa.gov/ORD/NRMRL/Pubs/1992/625R92013.html. | | | |
| | | | |
| Yes | No | N/A | 1. Does each Surface Disposal Unit (SDU) have a liner and leachate collection system? |
| | | | 2. Smallest distance from active SDU boundary to property boundary is _____ ft. |
| Yes | No | N/A | 3. For an active SDU (property boundary is greater than 150 meters from SDU) and without a liner or leachate collection system, do monitoring results show pollutant concentrations below values shown in 40 CFR Part 503.23(a)(1) Table 1? [503.23(a)(1)[1] |
| Yes | No | N/A | 4. For an active SDU without a liner and leachate collection system (property boundary is less than 150 meters from SDU), do monitoring results show pollutant concentrations below values shown in 40 CFR Part 503.23(a)(2) Table 2? [503.23(a)(1)[2] |
| Yes | No | N/A | 5. Are management practices employed? [503.24] |
| Yes | No | N/A | 6. List management practices where applicable:<br>___ No threatened or endangered species present or critical habitat affected at the location where bulk sludge is surface disposed.<br>___ Surface disposal unit shall not restrict flow of base flood.<br>___ If in seismic impact zone, design will withstand recorded horizontal ground acceleration.<br>___ Located > 60 meters from any fault displaced in Holocene time.<br>___ Not located in unstable area or wetlands.<br>___ Runoff collection and treatment with 25-year, 24-hour storm runoff event storage capacity.<br>___ Leachate collection system operated and maintained for 3 years after closure of the surface disposal unit.<br>___ Leachate treated and disposed of in accordance with applicable requirements, i.e., NPDES permit.<br>___ Methane is contained under covered units at a concentration less than 25% of the LEL for methane.<br>___ Methane is contained under a final cover placed on a closed unit maintained at a concentration less than 25% of the LEL for methane for three years after closure.<br>___ Methane concentration at the property line is maintained at a concentration less than the LEL for methane for three years after closure of the unit.<br>___ No feed or food crops grown on active unit.[3]<br>___ No animal grazing allowed on active unit.[3]<br>___ Public access restricted for the period of time while a unit is active and for three years after last active unit in a site closes. |

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| | | | ___ Sludge placed in an active unit does not contaminate groundwater aquifers.[4] |
| Yes | No | N/A | 7. Classification of Sewage Sludge with respect to Pathogens: [503.30] |
| | | | Class A _____ Class B _____ Unknown _____ |
| Yes | No | N/A | 8. Are Class A Pathogen reductions requirements met? [503.15(a)[5] |
| | | | 9. Indicate which method is used to meet Class A requirements: [503.32(a)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and Time/Temperature requirements. [503.32(a)(3)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and pH requirements. [503.32(a)(4)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and enteric viruses or helminth ova reduction requirements. [503.32(a)(5)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and enteric viruses or helminth ova density requirements. [503.32(a)(6)<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and Process to Further Reduce Pathogens (PFRP). [503.32(a)(7) and [503 Appendix B]<br>___ Fecal Coliform <1000 MPN/g total solids, or *Salmonella* <3 MPN/4 g total solids, and equivalent PFRP. [503.32(a)(8) and [503 Appendix B][7] |
| Yes | No | N/A | 10. Are Class B Pathogen reduction requirements met? [503.32(b) (5) |
| | | | 11. Indicate which method(s) is used to meet Class B requirements:<br>___ Geometric mean of seven Fecal Coliform samples with <2,000,000 MPN/g total solids or <2,000,000 Colony Forming Units/g total solids. [503.32(b)(2)<br>___ Treated by Process to Significantly Reduce Pathogens (PSRP). [503.32(b)(3) and [503 Appendix B][6]<br>___ Treated by equivalent PSRP. [503.32(b)(4) and [503 Appendix B][6] |
| Yes | No | N/A | 12. Is a Vector Attraction Reduction method practiced? [503.25(b)[7] |
| Yes | No | N/A | 13. Indicate Vector Attraction Reduction method: [503.33(b)<br>___ 38% Volatile Solids Reduction. [503.33(b)(1)<br>___ 40-day test - Volatile Solids reduced <17%. [503.33(b)(2) (Anaerobic Digestion Only)<br>___ 30-day test - Volatile Solids reduced <15%. [503.33(b)(3) (Aerobic Digestion Only)<br>___ Specific Oxygen Uptake Rate (SOUR) <1.5 mg/hr./gm TS @ 20°C. [503.33(b)(4)<br>___ Aerobic Process for >14 days @ >40°C with average sludge temperatures >45°C. [503.33(b)(5)<br>___ pH >12 for 2 hours and pH >11.5 for 22 hours [503.33(b)(6)<br>___ Sludge (with no unstabilized solids) contains >75% Total Solids prior to mixing with other materials. [503.33(b)(7)<br>___ Sludge (contains unstabilized solids) contains >90% Total Solids prior to mixing with other materials. [503.33(b)(8) |

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| | | | ___ Subsurface Injection. [503.33(b)(9)<br>___ Soil Incorporation. [503.33(b)(10)<br>___ Sludge covered with soil or other material at the end of the day. [503.33(b)(11) |
| Yes | No | N/A | 14. Have any SDUs been closed? |
| Yes | No | N/A | 15. Has facility submitted closure and post closure plan for any active SDU 180 days prior to closing? [503.22(c) |
| Comments: | | | |

Surface Disposal Footnotes:

(1) Table 1 of 503.23(a)(1) must be met for all sludge placed in an active surface disposal unit with a distance of greater than 150 meters from the boundary of the surface disposal unit to the property line. Site-specific limits can also be set by the permitting authority in accordance with 503.23(b).

Table 1 (mg/kg - dry weight basis)

| | | | | | |
|---|---|---|---|---|---|
| Arsenic | 73 | Chromium | 600 | Nickel | 420 |

(2) Table 2 of 503.23(a)(2) must be met for all sludge placed in an active surface disposal unit with a distance of less than 150 meters from the boundary of the surface disposal unit to the property line. Site-specific limits can also be set by the permitting authority in accordance with 503.23(b).

Table 2 (mg/kg - dry weight basis)

| Distance between unit boundary and property line (m) | Pollutant Concentration (mg/kg) | | |
|---|---|---|---|
| | Arsenic | Chromium | Nickel |
| 0 to less than 25 | 30 | 200 | 210 |
| 25 to less than 50 | 34 | 220 | 240 |
| 50 to less than 75 | 39 | 260 | 270 |
| 75 to less than 100 | 46 | 300 | 320 |
| 100 to less than 125 | 53 | 360 | 390 |
| 125 to less than 150 | 62 | 450 | 420 |

(3) Unless specific approval from the permitting authority has been obtained by the facility.

(4) Facility must have results of groundwater monitoring study developed by a qualified groundwater scientist or a certification from a qualified groundwater scientist to demonstrate no contamination.

(5) Facility must meet Class A pathogen reduction requirements of 503.32(a) or Class B 503.32(b)(2) through (b)(4) unless vector attraction reduction method 503.33(b)(11), covering sludge at the end of the day, is used.

(6) Process to Significantly Reduce Pathogens (PSRP) includes Aerobic Digestion, Air Drying, Anaerobic Digestion, Composting, and Lime Stabilization. Process to Further Reduce Pathogens (PFRP) includes Composting, Heat Drying, Heat Treatment, Thermophilic Aerobic Digestion, Beta Ray Irradiation, Gamma Ray Irradiation, and Pasteurization. Each process has required operating conditions to demonstrate compliance. See 503 Appendix B and Unit Process Checklist.

(7) Facility must meet vector attraction reduction requirements of 503.33(b) to surface dispose sludge.

## Sludge Inspection Checklist

| | | | |
|---|---|---|---|
| Yes | No | N/A | 1. Does the incinerator meet the definition of a sewage sludge incinerator? |
| Yes | No | N/A | 2. Do sewage sludge monitoring results show pollutant concentrations below permit limits? |
| Yes | No | N/A | 3. Does THC monitoring show concentrations below 100 ppm (monthly average)? |
| Yes | No | N/A | 4. Are there instruments installed that continuously measure and record THC (or alternatively CO), oxygen concentration, moisture content, and combustion temperatures? |
| Yes | No | N/A | 5. Is the THC instrument calibrated as required by 503.45 (once every 24-hour period using propane) or the permit? |
| Yes | No | N/A | 6. Are the other instruments calibrated as required by the permit? |
| Yes | No | N/A | 7. Are the instruments operated and maintained as specified by the permit? |
| Yes | No | N/A | 8. How many times was the incinerator operated at above the maximum combustion temperature specified in the permit? _____<br>For how long was the incinerator in operation above the maximum combustion temperature? _____ |
| Yes | No | N/A | 9. How many times was the incinerator operated outside the range of the air pollution control devices operating parameters specified in the permit? _____<br>For how long was the incinerator in operation outside the ranges? _____ |
| Yes | No | N/A | 10. Are the following records maintained: |
| Yes | No | N/A | Concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator. |
| Yes | No | N/A | THC concentrations in the exit gas. |
| Yes | No | N/A | Information that indicates NESHAP for beryllium in Subpart C of 40 CFR Part 61 is met. |
| Yes | No | N/A | Information that indicates NESHAP for mercury in Subpart E of 40 CFR Part 61 is met. |
| Yes | No | N/A | Combustion temperatures, including maximum combustion temperature. |
| Yes | No | N/A | Values for air pollution control device operating parameters. |
| Yes | No | N/A | Oxygen concentration. |
| Yes | No | N/A | Information used to measure moisture content in the exit gas. |
| Yes | No | N/A | Sewage sludge feed rate. |
| Yes | No | N/A | Stack height of incinerator. |
| Yes | No | N/A | Dispersion factor for the site. |
| Yes | No | N/A | Control efficiency for lead, arsenic, cadmium, chromium, and nickel. |
| Yes | No | N/A | Risk specific concentration for chromium (if applicable). |
| Yes | No | N/A | Calibration and maintenance log for the instruments used to measure THC (or CO), oxygen concentration, moisture content, and combustion temperatures. |

## Sludge Inspection Checklist

| | |
|---|---|
| Yes No N/A | Are these records maintained for 5 years? |
| Yes No N/A | 11. Have all instances of noncompliance been reported as specified by the permit? |
| Comments: | |

# Appendix Q –
# No Exposure Certification Form

NPDES FORM 3510-11

United States Environmental Protection Agency
Washington, DC 20460

Form Approved
OMB No. 2040-0211

## NO EXPOSURE CERTIFICATION for Exclusion from NPDES Storm Water Permitting

Submission of this No Exposure Certification constitutes notice that the entity identified in Section A does not require permit authorization for its storm water discharges associated with industrial activity in the State identified in Section B under EPA's Storm Water Multi-Sector General Permit due to the existence of a condition of no exposure.

A condition of no exposure exists at an industrial facility when all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. A storm resistant shelter is not required for the following industrial materials and activities:

- drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak. "Sealed" means banded or otherwise secured and without operational taps or valves;
- adequately maintained vehicles used in material handling; and
- final products, other than products that would be mobilized in storm water discharges (e.g., rock salt).

A No Exposure Certification must be provided for each facility qualifying for the no exposure exclusion. In addition, the exclusion from NPDES permitting is available on a facility-wide basis only, not for individual outfalls. If any industrial activities or materials are or will be exposed to precipitation, the facility is not eligible for the no exposure exclusion.

By signing and submitting this No Exposure Certification form, the entity in Section A is certifying that a condition of no exposure exists at its facility or site, and is obligated to comply with the terms and conditions of 40 CFR 122.26(g).

ALL INFORMATION MUST BE PROVIDED ON THIS FORM.

**Detailed instructions for completing this form and obtaining the no exposure exclusion are provided on pages 3 and 4.**

### A. Facility Operator Information

1. Name: _____ 2. Phone: _____
3. Mailing Address: a. Street: _____
   b. City: _____ c. State: ____ d. Zip Code: _____–____

### B. Facility/Site Location Information

1. Facility Name: _____
2. a. Street Address: _____
   b. City: _____ c. County: _____
   d. State: ____ e. Zip Code: _____–____
3. Is the facility located on Indian Lands? Yes ☐ No ☐
4. Is this a Federal facility? Yes ☐ No ☐
5. a. Latitude: ____ ° ____ ' ____ " b. Longitude: ____ ° ____ ' ____ "
6. a. Was the facility or site previously covered under an NPDES storm water permit? Yes ☐ No ☐
   b. If yes, enter NPDES permit number: _____
7. SIC/Activity Codes: Primary: ____ Secondary (if applicable): ____
8. Total size of site associated with industrial activity: _____ acres
9. a. Have you paved or roofed over a formerly exposed, pervious area in order to qualify for the no exposure exclusion? Yes ☐ No ☐
   b. If yes, please indicate approximately how much area was paved or roofed over. Completing this question does not disqualify you for the no exposure exclusion. However, your permitting authority may use this information in considering whether storm water discharges from your site are likely to have an adverse impact on water quality, in which case you could be required to obtain permit coverage.

   Less than one acre ☐ One to five acres ☐ More than five acres ☐

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| NPDES FORM 3510-11 | EPA | NO EXPOSURE CERTIFICATION for Exclusion from NPDES Storm Water Permitting | Form Approved OMB No. 2040-0211 |
|---|---|---|---|

**C. Exposure Checklist**

Are any of the following materials or activities exposed to precipitation, now or in the foreseeable future? (Please check either "Yes" or "No" in the appropriate box.) **If you answer "Yes" to any of these questions (1) through (11), you are not eligible for the no exposure exclusion.**

| | Yes | No |
|---|---|---|
| 1. Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to storm water | ☐ | ☐ |
| 2. Materials or residuals on the ground or in storm water inlets from spills/leaks | ☐ | ☐ |
| 3. Materials or products from past industrial activity | ☐ | ☐ |
| 4. Material handling equipment (except adequately maintained vehicles) | ☐ | ☐ |
| 5. Materials or products during loading/unloading or transporting activities | ☐ | ☐ |
| 6. Materials or products stored outdoors (except final products intended for outside use [e.g., new cars] where exposure to storm water does not result in the discharge of pollutants) | ☐ | ☐ |
| 7. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers | ☐ | ☐ |
| 8. Materials or products handled/stored on roads or railways owned or maintained by the discharger | ☐ | ☐ |
| 9. Waste material (except waste in covered, non-leaking containers [e.g., dumpsters]) | ☐ | ☐ |
| 10. Application or disposal of process wastewater (unless otherwise permitted) | ☐ | ☐ |
| 11. Particulate matter or visible deposits of residuals from roof stacks and/or vents not otherwise regulated (i.e., under an air quality control permit) and evident in the storm water outflow | ☐ | ☐ |

**D. Certification Statement**

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of "no exposure" and obtaining an exclusion from NPDES storm water permitting.

I certify under penalty of law that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the industrial facility or site identified in this document (except as allowed under 40 CFR 122.26(g)(2)).

I understand that I am obligated to submit a no exposure certification form once every five years to the NPDES permitting authority and, if requested, to the operator of the local municipal separate storm sewer system (MS4) into which the facility discharges (where applicable). I understand that I must allow the NPDES permitting authority, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of storm water from the facility.

Additionally, I 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 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, 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.

Print Name: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Print Title: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Signature: _____

Date: |_|_|_|_|_|_|

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NPDES FORM 3510-11

EPA

# Instructions for the NO EXPOSURE CERTIFICATION for Exclusion from NPDES Storm Water Permitting

Form Approved OMB No. 2040-0211

**Who May File a No Exposure Certification**

Federal law at 40 CFR Part 122.26 prohibits point source discharges of storm water associated with industrial activity to waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. However, NPDES permit coverage is not required for discharges of storm water associated with industrial activities identified at 40 CFR 122.26(b)(14)(i)-(ix) and (xi) if the discharger can certify that a condition of "no exposure" exists at the industrial facility or site.

Storm water discharges from construction activities identified in 40 CFR 122.26(b)(14)(x) and (b)(15) are not eligible for the no exposure exclusion.

**Obtaining and Maintaining the No Exposure Exclusion**

This form is used to certify that a condition of no exposure exists at the industrial facility or site described herein. This certification is only applicable in jurisdictions where EPA is the NPDES permitting authority and must be re-submitted at least once every five years.

The industrial facility operator must maintain a condition of no exposure at its facility or site in order for the no exposure exclusion to remain applicable. If conditions change resulting in the exposure of materials and activities to storm water, the facility operator must obtain coverage under an NPDES storm water permit immediately.

**Where to File the No Exposure Certification Form**

| No Exposure Forms sent regular mail: | Forms sent overnight/express: |
|---|---|
| SW No Exposure Certification (4203M)<br>USEPA<br>1200 Pennsylvania Avenue, NW<br>Washington, D.C. 20460 | SW No Exposure Certification<br>US EPA East Building, Rm. 7329<br>1201 Constitution Avenue, NW<br>Washington, D.C. 20004<br>(202) 564-9537 |

**Completing the Form**

You must type or print, using uppercase letters, in appropriate areas only. Enter only one character per space (i.e., between the marks). Abbreviate if necessary to stay within the number of characters allowed for each item. Use one space for breaks between words. One form must be completed for each facility or site for which you are seeking to certify a condition of no exposure. Additional guidance on completing this form can be accessed through EPA's web site at www.epa.gov/owm/sw. Please make sure you have addressed all applicable questions and have made a photocopy for your records before sending the completed form to the above address.

**Section A. Facility Operator Information**

1. Provide the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this certification. The name of the operator may or may not be the same as the name of the facility. The operator is the legal entity that controls the facility's operation, rather than the plant or site manager.
2. Provide the telephone number of the facility operator.
3. Provide the mailing address of the operator (P.O. Box numbers may be used). Include the city, state, and zip code. All correspondence will be sent to this address.

**Section B. Facility/Site Location Information**

1. Enter the official or legal name of the facility or site.
2. Enter the complete street address (if no street address exists, provide a geographic description [e.g., Intersection of Routes 9 and 55]), city, county, state, and zip code. Do not use a P.O. Box number.
3. Indicate whether the facility is located on Indian Lands.
4. Indicate whether the industrial facility is operated by a department or agency of the Federal Government (see also Section 313 of the Clean Water Act).
5. Enter the latitude and longitude of the approximate center of the facility or site in degrees/minutes/seconds. Latitude and longitude can be obtained from United States Geological Survey (USGS) quadrangle or topographic maps, by calling 1-(888) ASK-USGS, or by accessing EPA's web site at http://www.epa.gov/owm/sw/industry/index.htm and selecting Latitude and Longitude Finders under the Resources/Permit section.

   Latitude and longitude for a facility in decimal form must be converted to degrees (°), minutes ('), and seconds (") for proper entry on the certification form. To convert decimal latitude or longitude to degrees/minutes/seconds, follow the steps in the following example.

   Example: Convert decimal latitude 45.1234567 to degrees (°), minutes ('), and seconds (").

   a) The numbers to the left of the decimal point are the degrees: 45°.

   b) To obtain minutes, multiply the first four numbers to the right of the decimal point by 0.006: 1234 x 0.006 = 7.404.

   c) The numbers to the left of the decimal point in the result obtained in (b) are the minutes: 7'.

   d) To obtain seconds, multiply the remaining three numbers to the right of the decimal from the result obtained in (b) by 0.06: 404 x 0.06 = 24.24. Since the numbers to the right of the decimal point are not used, the result is 24".

   e) The conversion for 45.1234567 = 45° 7' 24".
6. Indicate whether the facility was previously covered under an NPDES storm water permit. If so, include the permit number.
7. Enter the 4-digit SIC code which identifies the facility's primary activity, and second 4-digit SIC code identifying the facility's secondary activity, if applicable. SIC codes can be obtained from the Standard Industrial Classification Manual, 1987.
8. Enter the total size of the site associated with industrial activity in acres. Acreage may be determined by dividing square footage by 43,560, as demonstrated in the following example.

   Example: Convert 54,450 $ft^2$ to acres

   Divide 54,450 $ft^2$ by 43,560 square feet per acre:
   54,450 $ft^2$ ÷ 43,560 $ft^2$/acre = 1.25 acres.
9. Check "Yes" or "No" as appropriate to indicate whether you have paved or roofed over a formerly exposed, pervious area (i.e., lawn, meadow, dirt or gravel road/parking lot) in order to qualify for no exposure. If yes, also indicate approximately how much area was paved or roofed over and is now impervious area.

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## Instructions for the NO EXPOSURE CERTIFICATION for Exclusion from NPDES Storm Water Permitting

Form Approved OMB No. 2040-0211

**Section C. Exposure Checklist**

Check "Yes" or "No" as appropriate to describe the exposure conditions at your facility. If you answer "Yes" to **ANY** of the questions (1) through (11) in this section, a potential for exposure exists at your site and you cannot certify to a condition of no exposure. You must obtain (or already have) coverage under an NPDES storm water permit. After obtaining permit coverage, you can institute modifications to eliminate the potential for a discharge of storm water exposed to industrial activity, and then certify to a condition of no exposure.

**Section D. Certification Statement**

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means:

(i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or

(ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipal, State, Federal, or other public facility: by either a principal executive or ranking elected official.

**Paperwork Reduction Act Notice**

Public reporting burden for this certification is estimated to average 1.0 hour per certification, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose to provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Director, OPPE Regulatory Information Division (2137), USEPA, 401 M Street, SW, Washington, D.C. 20460. Include the OMB control number of this form on any correspondence. Do not send the completed No Exposure Certification form to this address.

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# Appendix R –
# NPDES Industrial Storm Water Investigation and Case Development (Industrial)

**Background Information** *(complete in field)*

| National Database Information | | General | |
|---|---|---|---|
| Inspection Type | **W** | Inspector Name | |
| NPDES ID Number | | Telephone | |
| Inspection Date | | Entry Time | |
| Inspection Type | EPA State EPA Oversight | Exit Time | |
| Facility Type | | Signature | |

| Facility Location Information | | | | |
|---|---|---|---|---|
| Name/Location/ Mailing Address | | | | |
| GPS Coordinates | Latitude | | Longitude | |
| Receiving Water(s)/MS4's | | | | |

| Contact Information | | |
|---|---|---|
| | Name | Telephone |
| Owner/Permittee | | |
| Operator | | |
| Co-Permittee | | |
| Facility Contact | | |
| Authorized Official(s) | | |

| Site Information: | |
|---|---|
| Industrial Activity that qualifies the facility for permit coverage | |
| SIC Code(s) | |
| No Exposure Certification | |

| **Basic Permit Information** *(circle one)* | | |
|---|---|---|
| Permit Coverage | Y | N |
| Permit Type | General | Individual |
| Copy of NOI on-site? | Y | N |
| NOI Date | | |

| **Basic SWPPP Information** | | |
|---|---|---|
| SWPPP on-site | Y | N |
| SWPPP Satisfactory* | Y | N |
| SWPPP Implementation Satisfactory | Y | N |
| *A Satisfactory SWPPP must be both current and complete (see pages 4, 5, and 6 of this checklist). | | |

**SWPPP Review** *(can be completed in office)*

| **General** | | | **Notes:** |
|---|---|---|---|
| Is there a SWPPP? | Y | N | |
| Is a copy of the SWPPP on-site? | Y | N | |
| Was the SWPPP developed before the submittal of the NOI? | Y | N | |
| Did all "operators" and co-permittees sign the SWPPP? | Y | N | |
| Did the signatures include the certification statement? | Y | N | |
| Were the signatories authorized to sign? | Y | N | |
| Was the SWPPP developed specifically for this site? | Y | N | |
| Has it been revised to address any recent changes to operations on-site? | Y | N | |
| Is an individual/team responsible for developing/implementing SWPPP identified (e.g., pollution prevention team)? | Y | N | |
| Are employee training records regarding storm water pollution prevention topics included in SWPPP? | Y | N | |
| Operator evaluation of ESA requirements. | Y | N | |

| **Site Map** | | | **Notes:** |
|---|---|---|---|
| Is there a legible site map? | Y | N | |
| Drainage patterns/outfalls? | Y | N | |
| Identification of types of pollutants likely to be discharged from each drainage area? | Y | N | |
| Location of major structural controls used to reduce pollutants in runoff? | Y | N | |
| Name of receiving water(s) or MS4's listed? | Y | N | |
| Is receiving water a tributary to waters of the U.S. (if "yes" indicate name of tributary)? | Y | N | |
| Location of significant materials exposed to storm water? | Y | N | |
| Locations of major spills occurring within 3 years from date of NOI? | Y | N | |
| Location of fueling, deicing operations, maintenance, loading and unloading, material storage, waste disposal? | Y | N | |

| **Summary of Potential Pollutant Sources** | | | **Notes:** |
|---|---|---|---|
| Description of activities, materials, features of site with potential to contribute significant amounts of pollutants to storm water? | Y | N | |
| If deicing chemicals are used, is there a record of (1) all the types of chemicals used, including Safety Data Sheets, and (2) monthly quantities, either as measured or using best estimates? | Y | N | |
| Description of the vehicle and equipment wash water disposal method, including the (1) frequency, (2) volume, and (3) destination of said wash water? | Y | N | |
| Description of the control measures used for collecting or containing contaminated melt water from collection areas used for disposal of contaminated snow? | Y | N | |

| **Significant Spills & Leaks** | | | **Notes:** |
|---|---|---|---|
| | | | |

| | | | |
|---|---|---|---|
| List of significant spills and leaks over 3-year time period, description of response taken, and actions to prevent similar spills in the future? | Y | N | |

| **Storm Water Controls** | | | **Notes:** |
|---|---|---|---|
| Does the SWPPP describe the *non-structural* controls that will be used to prevent/reduce discharge of pollutants in storm water runoff? | Y | N | |
| Does the SWPPP describe the *structural* controls that will be used to prevent/reduce discharge of pollutants in storm water runoff? | Y | N | |
| Does the SWPPP describe other controls that will be used to prevent/reduce off-site tracking or blowing of sediment, dust and raw, final or waste materials, or other solid materials and floating debris? | Y | N | |
| Does the SWPPP incorporate the 8 baseline controls (good housekeeping, minimizing exposure, PM, spill prevention/response procedures, routine inspections and comprehensive site evaluations, employee training, sediment and erosion control, runoff management)? | Y | N | |
| Does the SWPPP contain completed routine inspection reports/logs regarding reportable implementation of 8 baseline controls? | Y | N | |
| Does the SWPPP describe the pollutant or activity to be controlled by each selected control and provide an implementation schedule? | Y | N | |

| Non-Storm Water Discharges | | | Notes: |
|---|---|---|---|
| Certification that facility has been tested for non-storm water discharges from the site? | Y | N | |
| Description of testing method, drainage points, observed results, and date of test? | Y | N | |

**Inspections**

| Self-Inspections | | | Notes: |
|---|---|---|---|
| In what areas does the airport authority conduct facility inspections? | | | |
| Are routine facility inspections conducted at least once each calendar quarter, with at least one member of the SWPPP team participating? | Y | N | |
| Are routine facility inspections conducted at least once each calendar year during a period when a stormwater discharge in occurring? | Y | N | |
| During each inspection are the following examined:<br>• Industrial materials, residue or trash that may have come in contact with stormwater<br>• Leaks or spills from industrial equipment, drums, tanks, and other containers<br>• Offsite tracking of industrial waste materials, or sediment where vehicles enter or exit the site<br>• Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas<br>• Control measures needing replacement, maintenance or repair | Y | N | |
| Are the routine facility inspection findings documented and maintained with the SWPPP? | Y | N | |
| Does the annual report include the following: | Y | N | |

| Self-Inspections | | | Notes: |
|---|---|---|---|
| • The inspection date and time;<br>• The name(s) and signature(s) of the inspector(s);<br>• Weather information;<br>• All observations relating to the implementation of control measures at the facility;<br>• Any incidents of noncompliance; and<br>• A statement, signed and certified. | | | |

**Deicing Operations *(if applicable)***

| Deicing | Notes: |
|---|---|
| What deicing chemicals does the airport authority use for aircraft and runway deicing? | |
| What control measures does the airport authority implement to reduce discharge of pollutants from runway and aircraft deicing operations? | |
| Has the airport authority determined whether alternatives to glycol are feasible? | |
| What runoff management control measures does the airport authority implement to minimize the discharge of pollutants in stormwater from runway and aircraft deicing? | |
| Has the airport authority ever applied deicing fluids during non-precipitation events? | |
| What control measures does the airport authority implement to minimize the discharge of pollutants from deicing fluids that are applied during non-precipitation events? | |
| What is the seasonal timeframe during which deicing activities typically occur? | |

**Sampling**

| **Monitoring** | | | **Notes:** |
|---|---|---|---|
| Are samples collected within 30 minutes of measurable weather events occurring 72 hours after previous measurable weather event? | Y | N | |
| Are sampling locations appropriate? | Y | N | |
| Were the samples collected and preserved in accordance with 40 CFR Part 136? | Y | N | |
| Were proper chain-of-custody procedures followed? | Y | N | |

**SWPPP Implementation** *(complete in field)*

| **General** | |
|---|---|
| **Industrial Activity** | *(describe principal product, production rate, potential pollutants, areas exposed to precipitation, direction of storm water flow)* |
| **Facility Description** | (*describe age and size of facility, number of employees, hours of operation*) |

| **Storm Water Controls** | |
|---|---|
| **List the structural and non-structural controls employed by the facility**. | *(provide a brief description of each)* |

| **Storm Water Controls** | |
|---|---|
| **Are the controls reasonable and appropriate for the facility?** | *(indicate "yes" or "no", or if not appropriate, explain)* |
| **Are the controls installed correctly and maintained in effective operating condition?** | *(indicate "yes" or "no", or if not appropriate, explain)* |
| **Are the structural and non-structural controls employed by the facility consistent with the SWPPP?** | *(indicate "yes" or "no" and explain any observed discrepancies)* |
| **Provide a brief description of other controls that manage/prevent/ minimize storm water runoff.** | *(e.g., erosion and sediment controls, exposure minimization, diversion structures, pollution prevention, inlet protection/control at storm drains)* |

| Miscellaneous | |
|---|---|
| **Any evidence of discharge to receiving waters?** | *(e.g., storm water runoff, dry weather discharge, co-mingling of process waste water)* |
| **Do the storm water outfalls on-site correspond with those listed on the site map and in SWPPP?** | *(indicate "yes" or "no", or if not appropriate, explain)* |

| Photograph Log |
|---|
| 1. |
| 2. |
| 3. |
| 4. |

# Appendix S –
# Industrial Source Control BMP Questions

## Industrial Source Control BMP Questions

### FUELING

1. Has spill and overfill prevention equipment been installed?
2. Are vehicle fuel tanks often "topped off"?
3. Have steps been taken to protect fueling areas from rain?
4. Is runon to the fueling area minimized?
5. Are oil/water separators or oil and grease traps installed in storm drains in the fueling area?
6. Is the fueling area cleaned by hosing or washing?
7. Do you control petroleum spills?
8. Are employees aware of ways to reduce contamination of storm water at fueling stations?
9. Where does the water drain from the fueling area?
10. Do any of the drains connect to wells?

| SUMMARY OF FUELING STATION BMPs |
|---|
| · Consider installing spill and overflow protection.<br>· Discourage topping off of fuel tanks.<br>· Reduce exposure of the fuel area to storm water.<br>· Use dry cleanup methods for the fuel area.<br>· Use proper petroleum spill control.<br>· Encourage employee participation. |

### MAINTAINING VEHICLES AND EQUIPMENT

1. Is maintenance which involves cleaning of vehicle and/or equipment parts (including engine, transmission, brake or other miscellaneous parts) performed on-site?
2. Does the cleaning involve the use of solvents or surfactants?
3. Has the facility looked into using nontoxic or less toxic cleaners or solvents?
4. Are work areas and spills washed or hosed down with water?
5. Are spills or materials washed or poured down the drain?
6. Are oil filters completely drained before recycling or disposal?
7. Are incoming vehicles and equipment checked for leaking oil and fluids?
8. Are wrecked vehicles or damaged equipment stored onsite?
9. Does the facility recycle any of the automotive fluids or parts?
10. Can the facility reduce the number of different solvents used?
11. Are wastes separated?
12. Does the facility use recycled products?

**SUMMARY OF VEHICLE MAINTENANCE AND REPAIR BMPs**

- Check for leaking oil and fluids.
- Use nontoxic or low-toxicity materials.
- Drain oil filters before disposal or recycling.
- Do not pour liquid waste down drains.
- Recycle engine fluids and batteries.
- Segregate and label wastes.
- Buy recycled products.

## PAINTING VEHICLES AND EQUIPMENT

1. Are vehicles or other equipment painted on-site?
2. In preparation for painting, is old paint removed physically (sanding, sand blasting, etc.) or chemically (solvent paint stripper)?
3. Before applying new paint, are surfaces chemically prepared (coating, etching, cleaning etc.)?
4. Is care taken to prevent paint wastes from contaminating storm water runoff?
5. Are wastes from sanding contained?
6. Are parts inspected before painting?
7. Is the facility using painting equipment that creates little waste?
8. Are employees trained to use spray equipment correctly?
9. Does the facility recycle paint, paint thinner, or solvents?
10. Are wastes separated?
11. Can the facility reduce the number of solvents used?
12. Does the facility use recycled products?

**SUMMARY OF PAINTING OPERATION BMPs**

- Inspect parts prior to painting.
- Contain sanding wastes.
- Prevent paint waste from contacting storm water.
- Use proper interim storage of waste paint, solvents, etc.
- Evaluate efficiency of equipment.
- Recycle paint, paint thinner, and solvents.
- Segregate wastes.
- Buy recycled products.

## WASHING VEHICLES AND EQUIPMENT

1. Has the facility considered using phosphate-free biodegradable detergents?
2. Are vehicles, equipment, or parts washed over the open ground?

| SUMMARY OF VEHICLE AND EQUIPMENT WASHING BMPs |
|---|
| · Consider use of phosphate-free detergent.<br>· Use designated cleaning areas.<br>· Consider recycling wash water. |

## LOADING AND UNLOADING MATERIALS

1. Are tank trucks and material delivery vehicles located where spills or leaks can be contained?
2. Is loading/unloading equipment checked regularly for leaks?
3. Are loading/unloading docks or areas covered to prevent exposure to rainfall?
4. Are loading/unloading areas designed to prevent storm water runon?
5. Is piping system routinely checked for leaks?
6. Are there alarms to alert staff of potential problems such as high levels in receiving tanks or pressure irregularities in transmission lines?
7. Where appropriate (especially where transmission lines are long or buried), is the piping system outfitted with flow meters to ensure that the amount unloaded equals the amount received?

| SUMMARY OF LOADING/UNLOADING OPERATIONS BMPs |
|---|
| · Contain leaks during transfer.<br>· Check equipment regularly for leaks.<br>· Limit exposure of material to rainfall.<br>· Prevent storm water runon. |

## LIQUID STORAGE IN ABOVE-GROUND TANKS

1. Do storage tanks contain liquid hazardous materials, hazardous wastes, or oil?
2. Are operators trained in correct operating procedures and safety activities?
3. Does the facility have safeguards against accidental discharge?
4. Are tank systems inspected, and is tank integrity tested regularly?
5. Are tanks bermed or surrounded by a secondary containment system?

| SUMMARY OF BMPs FOR LIQUID STORAGE IN ABOVE-GROUND TANKS |
|---|
| · Comply with applicable State and Federal laws.<br>· Properly train employees.<br>· Install safeguards against accidental release.<br>· Routinely inspect tanks and equipment.<br>· Consider installing secondary containment. |

## INDUSTRIAL WASTE MANAGEMENT AND OUTSIDE MANUFACTURING

1. Has the facility looked for ways to reduce waste at the facility?
2. Has the facility considered waste reduction BMPs?
3. Are industrial waste management and outside manufacturing areas checked often for spills and leaks?
4. Are industrial waste management areas or manufacturing activities covered, enclosed, or bermed?
5. Are vehicles used to transport wastes to the land disposal or treatment site equipped with anti-spill equipment?
6. Does the facility use loading systems that minimize spills and fugitive losses such as dust or mists?
7. Are sediments or wastes prevented from being tracked offsite?
8. Is storm water runoff minimized from the land disposal site?

| SUMMARY OF INDUSTRIAL WASTE MANAGEMENT AND OUTSIDE MANUFACTURING BMPs |
|---|
| · Conduct a waste reduction assessment.<br>· Institute industrial waste source reduction and recycling BMPs.<br>· Prevent runoff and runon from contacting the waste management area.<br>· Minimize runoff from land application sites. |

## OUTSIDE STORAGE OF RAW MATERIALS, BY-PRODUCTS, OR FINISHED PRODUCTS

1. Are materials protected from rainfall, runon, and runoff?

| SUMMARY OF BMPs FOR OUTSIDE STORAGE OF RAW MATERIALS, BY-PRODUCTS, OR FINISHED PRODUCTS |
|---|
| · Cover or enclose materials. |

## SALT STORAGE

1. Are salt piles protected from rain?
2. Is storm water runon prevented from contacting storage piles and loading and unloading areas?

| SUMMARY OF SALT STORAGE FACILITIES BMPs |
|---|
| · Put salt under a roof.<br>· Use temporary covers.<br>· Enclose or berm transfer areas. |

# Appendix T –
# Notice of Termination for Stormwater

THIS FORM REPLACES FORM 3517-7 (8-98)
Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES FORM

United States Environmental Protection Agency
Washington, DC 20460

**Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity**

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

## I. Permit Information

NPDES Storm Water General Permit Tracking Number:

Reason for Termination (Check only one):

- ☐ Final stabilization has been achieved on all portions of the site for which you are responsible.
- ☐ Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.
- ☐ Coverage under an alternative NPDES permit has been obtained.
- ☐ For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

## II. Operator Information

Name:

IRS Employer Identification Number (EIN): -

**Mailing Address:**

Street:

City: State: Zip Code: -

Phone: - - Fax (optional): - -

E-mail (optional):

## III. Project/Site Information

Project/Site Name:

Project Street/Location:

City: State: Zip Code: -

County or similar government subdivision: _____

## IV. Certification Information

I 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 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, 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.

Print Name: _____

Print Title: _____

Signature: _____

Date: _____

**EPA Form 3510-13 (Rev. 6/03)**

Instructions for Completing EPA Form 3510-13
**Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity**

NPDES Form  This Form Replaces Form 3517-7 (8-98)  Form Approved OMB Nos. 2040-0086 and 2040-0211

**Who May File an NOT Form**
Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

**Completing the Form**
Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink ♦ do not send a photocopied signature.

**Section I. Permit Number**
Enter the existing NPDES Storm Water General Permit Tracking Number assigned to the project by EPA's Storm Water Notice Processing Center. If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Storm Water Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

*Final stabilization has been achieved on all portions of the site for which you are responsible.*

*Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized.*

*Coverage under an alternative NPDES permit has been obtained.*

*For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.*

**Section II. Operator Information**
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address and telephone number of the operator. *Optional:* enter the fax number and e-mail address of the operator.

**Section III. Project/Site Information**
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

**Section IV. Certification Information**
All applications, including NOIs, must be signed as follows:
*For a corporation*: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

*For a partnership or sole proprietorship:* By a general partner or the proprietor, respectively; or

*For a municipality, state, federal, or other public agency:* By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

**Paperwork Reduction Act Notice**
Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, W ashington, DC 20460. Include the OMB number on any correspondence. Do not sent the completed form to this address.

EPA Form 3510-13 (Rev. 6/03)

# Appendix U –
# Typical "C" Coefficients

| TYPICAL "c" COEFFICIENTS FOR 5- TO 10-YEAR FREQUENCY DESIGN STORMS | |
|---|---|
| **Description of Area** | **Runoff Coefficients** |
| Business | |
| · Downtown areas | 0.70-0.95 |
| · Neighborhood areas | 0.50-0.70 |
| Residential | |
| · Single-family areas | 0.30-0.50 |
| · Multi-units (detached) | 0.40-0.60 |
| · Multi-units (attached) | 0.60-0.75 |
| Residential (suburban) | 0.25-0.40 |
| Apartment dwelling areas | 0.50-0.70 |
| Industrial | |
| · Light areas | 0.50-0.80 |
| · Heavy areas | 0.60-0.90 |
| Parks and cemeteries | 0.10-0.25 |
| Playgrounds | 0.20-0.35 |
| Railroad yard areas | 0.20-0.40 |
| Unimproved areas | 0.10-0.30 |
| Streets | |
| · Asphalt | 0.70-0.95 |
| · Concrete | 0.80-0.95 |
| · Brick | 0.70-0.85 |
| Drives and walks | 0.75-0.85 |
| Roofs | 0.75-0.95 |
| Lawns—course textured soil (greater than 85 percent sand) | |
| · Slope: Flat (2 percent) | 0.05-0.10 |
| Average (2-7 percent) | 0.10-0.15 |
| Steep (7 percent) | 0.15-0.20 |
| Lawns—fine textured soil (greater than 40 percent clay) | |
| · Slope: Flat (2 percent) | 0.13-0.17 |
| Average (2-7 percent) | 0.18-0.22 |
| Steep (7 percent) | 0.25-0.35 |
| Source: *Design and Construction of Sanitary and Storm Sewers*, with permission from the publisher, American Society of Civil Engineers, *Manual of Practice*, page 37, New York, 1960. | |

# Appendix V –
# Rain Zones of the United States

**Figure U-1**

**Rain Zones of the United States**

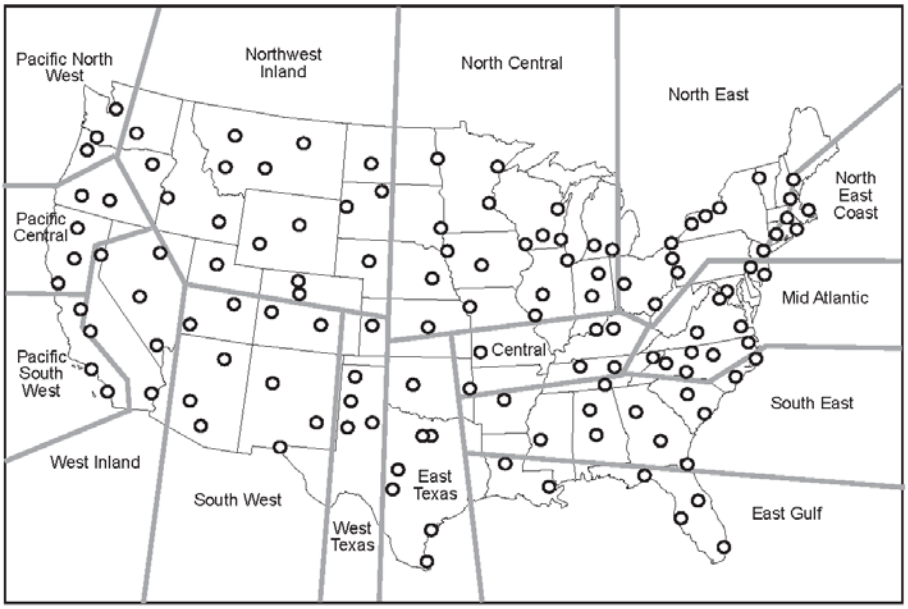


**Table U-1**

**Typical Values of Annual Storm Event Statistics for Rain Zones**

| Rain Zone | Annual Statistics | | | | Independent Storm Event Statistics | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. of Storms | | Precip | | Duration | | Intensity | | Volume | | DELTA | |
| | Avg | COV | Avg | COV | Avg | COV | Avg | COV | Avg | COV | Avg | COV |
| | | | (in) | | (hrs) | | (in/hr) | | (in) | | (hr) | |
| North East | 70 | 0.13 | 34.6 | 0.18 | 11.2 | 0.81 | 0.067 | 1.23 | 0.5 | 0.95 | 126 | 0.94 |
| North East-Coastal | 63 | 0.12 | 41.4 | 0.21 | 11.7 | 0.77 | 0.071 | 1.05 | 0.6 | 1.03 | 140 | 0.87 |
| Midatlantic | 62 | 0.13 | 39.5 | 0.18 | 10.1 | 0.84 | 0.082 | 1.20 | 0.6 | 1.01 | 143 | 0.97 |
| Central | 66 | 0.14 | 41.9 | 0.19 | 9.2 | 0.85 | 0.097 | 1.09 | 0.6 | 1.00 | 133 | 0.99 |
| North Central | 55 | 0.16 | 29.8 | 0.22 | 9.5 | 0.83 | 0.067 | 1.20 | 0.5 | 1.01 | 167 | 1.17 |
| Southeast | 65 | 0.15 | 49.0 | 0.20 | 8.7 | 0.92 | 0.122 | 1.09 | 0.7 | 1.10 | 136 | 1.03 |
| East Gulf | 68 | 0.17 | 53.7 | 0.23 | 6.4 | 1.05 | 0.176 | 1.03 | 0.8 | 1.19 | 130 | 1.25 |
| East Texas | 41 | 0.22 | 31.2 | 0.29 | 8.0 | 0.97 | 0.137 | 1.08 | 0.7 | 1.16 | 213 | 1.26 |
| West Texas | 30 | 0.27 | 17.3 | 0.33 | 7.4 | 0.98 | 0.121 | 1.13 | 0.5 | 1.07 | 302 | 1.53 |
| Southwest | 20 | 0.30 | 7.4 | 0.37 | 7.6 | 0.88 | 0.079 | 1.16 | 0.3 | 0.88 | 473 | 1.46 |
| West Inland | 14 | 0.38 | 4.9 | 0.43 | 9.4 | 0.75 | 0.055 | 1.06 | 0.3 | 0.87 | 766 | 1.54 |
| Pacific South | 19 | 0.36 | 10.2 | 0.42 | 11.6 | 0.76 | 0.054 | 0.76 | 0.5 | 0.96 | 476 | 2.09 |
| Northwest Inland | 31 | 0.23 | 11.5 | 0.29 | 10.4 | 0.82 | 0.057 | 1.20 | 0.3 | 0.83 | 304 | 1.43 |
| Pacific Central | 32 | 0.25 | 18.4 | 0.33 | 13.7 | 0.80 | 0.048 | 0.85 | 0.5 | 1.05 | 265 | 2.00 |
| Pacific Northwest | 71 | 0.15 | 56.7 | 0.19 | 15.9 | 0.80 | 0.035 | 0.73 | 0.5 | 1.09 | 123 | 1.50 |

COV - Coefficient of Variation - Standard Deviation / Mean  DELTA - Interval between storm midpoints

# Appendix W –
# NOAA Rainfall Worksheet

04/05/2013

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

## Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: **NATIONAL ARBORETUM DC, DC US** GHCND:USC00186350
Observation Time Temperature: 0700 Observation Time Precipitation: 0700 Elev: 49 ft. Lat: 38.913° N Lon: 76.970° W

| | | | | Temperature (°F) | | | Precipitation(see **) | | | | | Evaporation | | Soil Temperature (°F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 24 hrs. ending at observation time | | at Observation | 24 Hour Amounts ending at observation time | | | | At Obs Time | | | 4 in depth | | | 8 in depth | | |
| Preliminary | Year | Month | Day | Max. | Min. | | Rain, melted snow, etc. (in) | Flag | Snow, ice pellets, hail (in) | Flag | Snow, ice pellets, hail, ice on ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| | 2013 | 2 | 1 | 48 | 28 | 29 | 0.01 | | 0.4 | | T | | | | | | | | |
| | 2013 | 2 | 2 | 30 | 17 | 22 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 3 | 32 | 22 | 27 | 0.02 | | 0.4 | | T | | | | | | | | |
| | 2013 | 2 | 4 | 35 | 24 | 27 | T | | T | | 0 | | | | | | | | |
| | 2013 | 2 | 5 | 36 | 27 | 34 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 6 | 42 | 27 | 32 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 7 | 48 | 27 | 30 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 8 | 41 | 30 | 37 | 0.19 | | 0.0 | | 0 | | | | | | | | |
| | 2013 | 2 | 9 | 43 | 30 | 31 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 10 | 43 | 21 | 26 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 11 | 46 | 26 | 39 | 0.30 | | | | | | | | | | | | |
| | 2013 | 2 | 12 | 54 | 38 | 45 | T | | | | | | | | | | | | |
| | 2013 | 2 | 13 | 58 | 32 | 37 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 14 | 48 | 32 | 37 | 0.23 | | T | | 0 | | | | | | | | |
| | 2013 | 2 | 15 | 51 | 33 | 39 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 16 | 60 | 35 | 37 | 0.13 | | 0.0 | | 0 | | | | | | | | |
| | 2013 | 2 | 17 | 40 | 27 | 28 | 0.00 | | 0.0 | | 0 | | | | | | | | |
| | 2013 | 2 | 18 | 34 | 22 | 32 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 19 | 42 | 32 | 41 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 20 | 46 | 32 | 33 | 0.06 | | | | | | | | | | | | |
| | 2013 | 2 | 21 | 46 | 25 | 28 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 22 | 41 | 28 | 32 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 23 | 35 | 32 | 35 | 0.08 | | | | | | | | | | | | |
| | 2013 | 2 | 24 | 47 | 35 | 44 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 25 | 58 | 28 | 37 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 26 | 49 | 29 | 33 | 0.00 | | | | | | | | | | | | |
| | 2013 | 2 | 27 | 41 | 33 | 41 | 0.64 | | | | | | | | | | | | |
| | 2013 | 2 | 28 | 56 | 41 | 41 | 0.02 | | | | | | | | | | | | |
| | | | Summary | 44.6 | 29.0 | | 1.68 | | 0.8 | | | | | | | | | | |

The "*" flags in Preliminary indicate the data have not completed processing and qualitycontrol and may not be identical to the original observation
Empty, or blank, cells indicate that a data observation was not reported.
*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
"T" values in the Precipitation category above indicate a TRACE value was recorded.
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

# Appendix X –
# NPDES Industrial Storm Water Investigation and Case Development (Construction)

**Background Information *(complete in field)***

| **National Database Information** | | | | **General** | |
|---|---|---|---|---|---|
| Inspection Type | **W** | | | Inspector Name | |
| NPDES ID Number | | | | Telephone | |
| Inspection Date | | | | Entry Time | |
| Inspector Type *(circle one)* | EPA | State | EPA Oversight | Exit Time | |
| Facility Type *(circle one)* | Commercial/Industrial | Residential | Municipal | Signature | |

| **Facility Location Information** | | | | | |
|---|---|---|---|---|---|
| Name/Location/ Mailing Address | | | | | |
| GPS Coordinates | Latitude | | Longitude | | |
| Receiving Water(s) | | | | | |
| Disturbed Area | | Start Date | | Stop Date | |

| **Contact Information** | | |
|---|---|---|
| | Name(s) | Telephone |
| Name(s) and Title(s)/ Role(s) of All Parties Meeting the Definition of Operator | | |
| Facility Contact | | |
| Authorized Official(s) | | |

| **Site Information:** *(circle all that apply)* | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nature of Project** | Residential | Commercial/ Industrial | Roadway | Private | Federal | State/ Municipal | Other |
| **Construction Stage** | Clearing/ Grubbing | Rough Grading | Infrastructure | Building Construction | Final Grading | Final Stabilization | |

| Basic Permit Information | | |
|---|---|---|
| Permit Coverage? | Y | N |
| Permit Type | General | Individual |
| NOI visibly posted at entrance? | Y | N |
| Construction sign visibly posted at entrance? | Y | N |
| Are instructions posted for obtaining the SWPPP and contacting permit authority if indicators of pollution are observed? ( CGP section 1.5) | Y | N |
| Copy of permit on-site? | Y | N |
| NOI Date | | |

| Basic SWPPP Information | | |
|---|---|---|
| SWPPP on-site | Y | N |
| SWPPP Satisfactory* | Y | N |
| SWPPP Implementation Satisfactory | Y | Y |

*A Satisfactory SWPPP must be both current and complete (see pages 3-6 of this checklist).

**SWPPP Review** *(can be completed in office)*

| General | | | Notes: |
|---|---|---|---|
| Is there a SWPPP? | Y | N | |
| Is a copy of the SWPPP on-site? | Y | N | |
| Was the SWPPP designed specifically for the construction site? | Y | N | |
| Did all “operators” sign the SWPPP? | Y | N | |
| Did the signatures include the certification statement? | Y | N | |
| Were the signatories authorized to sign? | Y | N | |
| Have modifications been made to the SWPPP? | Y | N | |
| Are the dates of all SWPPP modifications maintained within the SWPPP? | Y | N | |

| | | | |
|---|---|---|---|
| Do the records of modifications include the name of the person authorizing each change and a brief summary of all changes? | Y | N | |

| **Site Description** | | | **Notes:** |
|---|---|---|---|
| Is there a site description? | Y | N | |
| Nature/sequence of construction activity? | Y | N | |
| Total area of site and total area to be disturbed? | Y | N | |
| Pre/post runoff coefficient/soils description? | Y | N | |
| Operator evaluation of Endangered Species Act requirements? | Y | N | |
| Name of receiving water(s) or MS4 listed? | Y | N | |
| Is the receiving water a tributary to waters of the U.S? (if "yes" indicate name of tributary) | Y | N | |
| Is there a site map? | Y | N | |
| Drainage patterns/outfalls on map? | Y | N | |
| Area of soil disturbance on map? | Y | N | |
| Location of major structural controls on map? | Y | N | |
| Location of storm water discharges to a surface water on map? | Y | N | |
| Location of materials or equipment storage on map (on- | Y | N | |

**SWPPP Review** *(continued)*

| **Controls to Reduce Pollutants** | | | **Notes:** |
|---|---|---|---|
| Does the SWPPP include a description of interim and permanent *stabilization practices* (e.g., seeding, mulching, riprap for the site)? | Y | N | |
| Does the SWPPP identify the contractor(s) and timing by which *stabilization practices* will be implemented? | Y | N | |
| Does the SWPPP include a description of *structural practices* (e.g., off-site vehicle tracking, silt fences, sediment traps, storm drain inlet protection) for the site? | Y | N | |
| Where the *structural practice* is a sediment basin that drains over 10 acres, is it adequately designed? (3,600 cu. ft./acre x total drainage acres) | Y | N | |
| Does the SWPPP identify the contractor(s) who will implement the *structural practices*? | Y | N | |
| Does the SWPPP identify *storm water management* measures to address storm water runoff once the construction is completed (e.g., retention ponds, velocity dissipation controls)? | Y | N | |
| Does the SWPPP describe maintenance procedures for these controls? | Y | N | |
| If treatment chemicals (polymers, flocculants, etc.) are used, are they being applied properly? | Y | N | |
| If cationic treatment chemicals are authorized, does the SWPPP contain required description of controls and implementation procedures, etc.? | Y | N | |

| **Inspections** | | | **Notes:** |
|---|---|---|---|
| Does the SWPPP describe inspection procedures? | Y | N | |
| Is the inspection schedule at least once every seven (7) calendar days; or once every fourteen (14) calendar days and within twenty-four (24) hours of the occurrence of a storm event of 0.25 inches or greater? | Y | N | |
| Does the Permittee determine if a storm event of 0.25 inches or greater has occurred on-site? How? | Y | N | |
| Does the Permittee complete an inspection report within 24 hours of completing any site inspection? | Y | N | |
| Does the Permittee keep a current copy of all inspection reports at the site or at an easily accessible location? | Y | N | |
| Do the inspection reports contain the inspection date? | Y | N | |
| Do the inspection reports contain a summary of inspection findings? | Y | N | |
| Do the inspection reports contain names and titles of personnel making the inspections? | Y | N | |
| Are the inspection reports signed and certified by an authorized person? | Y | N | |

| **Corrective Actions** | | | **Notes:** |
|---|---|---|---|
| Does the Permittee complete a corrective action report for each corrective action taken? | Y | N | |
| Do the corrective action reports state follow-up actions taken | Y | N | |

| **Corrective Actions** | | | **Notes:** |
|---|---|---|---|
| Do the corrective action reports state a summary of modifications to stormwater controls? | Y | N | |
| Do the corrective action reports note whether SWPPP modifications are required as a result of the corrective action? | Y | N | |
| Does the Permittee keep a current copy of all corrective action reports at the site or at an easily accessible location? | Y | N | |

**SWPPP Implementation *(complete in field)***

| **General** | |
|---|---|
| **Site Description** | (*include description of areas exposed to rainfall/runoff, drainage patterns & direction of flow*) |

| **Stabilization Practices** | |
|---|---|
| **Any unprotected/ exposed slopes/areas without vegetation, mulch or matting for more than 14 days after construction** | *(indicate "yes" or "no"; if "yes", how long without such?*) |

| **Stabilization Practices** | |
|---|---|
| **List stabilization practices employed at site.** | *(e.g., seeding, mulching, geotextiles, sod stabilization)* |
| **Stabilization practices properly applied in a timely manner and adequately maintained?** | *(indicate "yes" or "no"; explain if necessary)* |
| **List structural controls employed at the site. (e.g., silt fences, hay bales, storm drain inlet protection, sedimentation pond, rip rap, check dam, diversion structure)** | *(provide a brief description for each)* |

| **Stabilization Practices** | |
|---|---|
| **Discuss how the structural controls are, or are not, appropriate for the site.** | *(i.e., silt fence installed in a live stream)* |
| **Are structural controls installed according to good engineering practices?** | *(indicate "yes" or "no"; explain if necessary)* |
| **Are structural controls properly maintained? (i.e., are inlet protection measures replaced when clogged)** | *(indicate "yes" or "no"; explain if necessary)* |

| **Stabilization Practices** | |
|---|---|
| **Are structural controls implemented according to the SWPPP?** | *(indicate "yes" or "no"; explain if necessary)* |

**SWPPP Implementation** *(continued)*

| **Non-Structural Controls** | |
|---|---|
| **Good Housekeeping** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |
| **Vegetative Buffer** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |
| **Materials & Chemical Storage** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |
| **Equipment Wash/ Maintenance Area** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |
| **Concrete Washout Areas** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |

**SWPPP Implementation** *(continued)*

| **Other Controls** | |
|---|---|
| **Street Cleaning** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |
| **Off-site Vehicle Tracking** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |
| **Spill Cleanup** | *(indicate whether all spills are cleaned up immediately)* |
| **Storm Water Outfalls** | *(indicate whether outfalls identified correspond with the site map)* |

| **Other Controls** | |
|---|---|
| **Waste Disposal Practices** | *(provide brief description and whether appropriate /properly maintained; if N/A, so state)* |

| **Miscellaneous** | |
|---|---|
| **Evidence of sediment or other pollutants in the discharge?** | |
| **Evidence of Sediment Deposition to Surface Waters** | *(provide brief description)* |
| **Does the SWPPP reflect current site conditions?** | *(indicate "yes" or "no"; explain if necessary)* |

| **Photograph Log** |
| --- |
| 1. |
| 2. |
| 3. |
| 4. |

# Appendix Y –
# Construction Source Control BMP Questions

**CONSTRUCTION SOURCE CONTROL BMP QUESTIONS**
**SOIL EROSION AND SEDIMENT CONTROL PRACTICES**

## MINIMIZE THE AMOUNT OF DISTURBED SOIL

1. Does the site plan require a significant amount of grade changes?
2. Are there portions of the site that do not have to be cleared for construction to proceed?
3. Can construction be performed in stages, so that the entire site does not have to be cleared at one time?
4. Are there portions of the site that will be disturbed then left alone for long periods of time?
5. Does the facility stabilize all disturbed areas after construction is complete?
6. Does snow prevent the facility from seeding an area?
7. Is there enough rainfall to allow vegetation to grow?

## PREVENT RUNON FROM FLOWING ACROSS DISTURBED AREAS

1. Does runoff from the undisturbed uphill areas flow onto the construction site?
2. Will runoff flow down a steeply sloped, disturbed area on the site?
3. Is there a swale or stream that runs through the construction site?
4. Does construction traffic have to cross drainage swales or streams?

## SLOW DOWN THE RUNOFF TRAVELING ACROSS THE SITE

1. Is the site gently sloped?
2. Is the site stabilized with vegetation?
3. Does runoff concentrate into drainage swales on the site?

## REMOVE SEDIMENT FROM ONSITE RUNOFF BEFORE IT LEAVES THE SITE

1. Does the construction disturb an area 10 acres or larger that drains to a common location?
2. Is a sediment basin attainable on the site?
3. Does runoff leave the disturbed area as overland flow?
4. Is the flow concentrated in channels as it leaves the disturbed areas?
5. Are structural controls located along the entire downhill perimeter of all disturbed areas?
6. Is there a piped storm drain system with inlets in a disturbed area?
7. If treatment chemicals are authorized, which are used and how are they being applied and stored?

## MEET OR EXCEED LOCAL/STATE REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL

1. Does the State or local government require erosion and sediment control for construction projects?
2. Does the State or local government have an erosion and sediment control requirement that is different from the requirements of the NPDES storm water permit?

**OTHER CONTROLS**

**GOOD HOUSEKEEPING**

1. Does the facility appear to implement good housekeeping practices?

**WASTE DISPOSAL**

1. What steps are taken to ensure that construction waste is properly disposed of?
2. Are provided waste containers sufficient in size and quantity for the amount of waste generated on-site?
3. What management practices are used to minimize or prevent impacts on storm water from hazardous products on the construction site?
4. Are concrete trucks allowed to washout or dump onsite?
5. Is sandblasting performed at the site? If so, what is done with the used grit?

**MINIMIZING OFFSITE VEHICLE TRACKING OF SEDIMENTS**

1. What measures have been taken to prevent offsite vehicle tracking?

**SANITARY/SEPTIC DISPOSAL**

1. How are sanitary or septic wastes managed?
2. How does the facility demonstrate compliance with State or local sanitary or septic system regulations?

**MATERIAL MANAGEMENT**

1. What types of materials are found on the construction site?
2. How are these materials managed?
3. What risks are present onsite as a result of material management practices?
4. Is the facility implementing any methods to reduce potential risks from material management?
5. If applicable, how are pesticides managed at the site?
6. If applicable, how are petroleum products managed at the site?
7. If applicable, what steps are taken to reduce nutrient pollution from fertilizers and detergents?

**SPILLS**

1. Does the facility have a spill control plan for the site?
2. Does the facility know what spill prevention methods and responses will be used?

**CONTROL OF ALLOWABLE NON-STORM WATER DISCHARGES**

1. What non-storm water discharges are present at the site?
2. How does the facility manage the non-storm water discharges?
3. How are allowable non-storm water discharges addressed in the storm water Pollution Prevention Plan?

4. What types of controls or practices are used to prevent pollution from non-storm water discharges?
5. What types of controls are used for discharges that have sediments?

# Appendix Z –
# Infiltration Control Inspection Form

**Infiltration Control Inspection Form**

| Question | Yes | No | NA | NE | Notes |
|---|---|---|---|---|---|
| | | | | | |
| Are there indications of any of the following? | | | | | |
| Erosion | ☐ | ☐ | ☐ | ☐ | |
| Bed Sinking | ☐ | ☐ | ☐ | ☐ | |
| Rodent holes or water piping | ☐ | ☐ | ☐ | ☐ | |
| Trash and debris | ☐ | ☐ | ☐ | ☐ | |
| Leaf accumulation | ☐ | ☐ | ☐ | ☐ | |
| Excess sediment build-up | ☐ | ☐ | ☐ | ☐ | |
| Control is poorly designed or poorly graded | ☐ | ☐ | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| Is there ponded water in the control? | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| How many inlets are present? _____ | | | | | |
| How many outlets are present? _____ | | | | | |
| Are inlets set at an elevation that allows stormwater to flow into the control? | ☐ | ☐ | ☐ | ☐ | |
| Are outlets set at an elevation that allows stormwater to pond temporarily in the control and not discharge immediately? | ☐ | ☐ | ☐ | ☐ | |
| Are any of the inlet/outlets cracked or eroded? | ☐ | ☐ | ☐ | ☐ | |
| Are the inlet/outlets clear of sediment and debris and is water able to flow freely? | ☐ | ☐ | ☐ | ☐ | |
| Are the overflow and/or bypass structures clear of overgrown vegetation, excess sediment and debris? | ☐ | ☐ | ☐ | ☐ | |
| Are the pretreatment devices functioning as designed? | ☐ | ☐ | ☐ | ☐ | |

**Infiltration Control Inspection Form**

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| Are there indications of any of the following? | | | | | |
| Dead plants | ☐ | ☐ | ☐ | ☐ | |
| Diseased plants | ☐ | ☐ | ☐ | ☐ | |
| Weeds | ☐ | ☐ | ☐ | ☐ | |
| Overgrown vegetation | ☐ | ☐ | ☐ | ☐ | |
| Is grass maintained at a height of 3-6 inches? | ☐ | ☐ | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| If a planting plan is available, are the plants as specified in the plan? | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| Are there any bare spots that are without mulch cover or locations with mulch depth less than 2 inches? | ☐ | ☐ | ☐ | ☐ | |
| Does mulch appear to need to be replaced? | ☐ | ☐ | ☐ | ☐ | |
| Does the bed appear to be over mulched? | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| Is there evidence of excess nutrients (e.g., algal mat) at or near the control? | ☐ | ☐ | ☐ | ☐ | |
| Is there evidence of excess pesticides (e.g., leaf scorching) applied? | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |

Source: United States Environmental Protection Agency (EPA). 2015. Guidance for Inspecting and Maintaining Green Infrastructure Practices. 2014 Green Infrastructure Technical Assistance Program, City and County of Denver and Denver Urban Flood Control District, Denver, CO.
State of Washington Department of Ecology. Example Permeable Pavements Inspection Form. Herrera Environmental Consultants. http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/Resources/PermeablePavementInspectionForm.pdf

# Appendix AA –
# Permeable Pavements Inspection Form

**Permeable Pavements Inspection Form**

☐ Pervious Concrete
☐ Porous Asphalt
☐ Grid Pavers
☐ Interlocking Concrete Pavers
☐ Other: _____

| Question | Yes | No | NA | NE | Notes |
|---|---|---|---|---|---|
| | | | | | |
| Is there any evidence of excessive sediment on the surface of the permeable pavement? | ☐ | ☐ | ☐ | ☐ | |
| Are there indications of any of the following on the surface of the permeable pavement? | | | | | |
| Moss growth | ☐ | ☐ | ☐ | ☐ | |
| Cracks, tripping hazards, or concrete raveling | ☐ | ☐ | ☐ | ☐ | |
| Debris (trash, leaves, grass clippings, etc.) | ☐ | ☐ | ☐ | ☐ | |
| Surface settlement or depressions | ☐ | ☐ | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| Is there any evidence of any spills that have occurred on the permeable pavement? Describe | ☐ | ☐ | ☐ | ☐ | |
| If records are available, have they documented any past spills on the permeable pavement? Describe. | ☐ | ☐ | ☐ | ☐ | |
| Question | Yes | No | NA | NE | Notes |
| Is there ponded water on the surface of the permeable pavement? *If yes, describe the potential reasons for the ponded water (e.g. debris buildup, illicit connection, improperly graded/overloading of one section of the practice* | ☐ | ☐ | ☐ | ☐ | |

**Permeable Pavements Inspection Form**

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| Are there indications of any of the following around the perimeter of the permeable pavement? | | | | | |
| Dead vegetation | ☐ | ☐ | ☐ | ☐ | |
| Diseased vegetation | ☐ | ☐ | ☐ | ☐ | |
| Overgrown vegetation | ☐ | ☐ | ☐ | ☐ | |
| Is grass maintained at a height of 3-6 inches? | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Source: United States Environmental Protection Agency (EPA). 2015. Guidance for Inspecting and Maintaining Green Infrastructure Practices. 2014 Green Infrastructure Technical Assistance Program, City and County of Denver and Denver Urban Flood Control District, Denver, CO. State of Washington Department of Ecology. Example Bioretention Inspection Form. Herrera Environmental Consultants. http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/Resources/BioretentionInspectionForm.pdf

# Appendix AB –
# Rainwater Harvest Inspection Form

**Rainwater Harvesting Inspection Form**

☐ Irrigation only
☐ Graywater and/or irrigation
☐ Potable and/or irrigation
☐ Other:
_____

| Question | Yes | No | NA | NE | Notes |
|---|---|---|---|---|---|
| | | | | | |
| Is the tank cracked, leaking, or need repairs? | ☐ | ☐ | ☐ | ☐ | |
| Is there evidence of sediment buildup in the tank? | ☐ | ☐ | ☐ | ☐ | |
| Are the pump and electrical system functioning properly? | ☐ | ☐ | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| Are there leaves or other debris in the gutters or pipes? | ☐ | ☐ | ☐ | ☐ | |
| Is there debris or pollutants in the prescreening devices or first flush diverters? | ☐ | ☐ | ☐ | ☐ | |
| Are mosquito screens missing or damaged? | ☐ | ☐ | ☐ | ☐ | |
| Is there an odor in the water? | ☐ | ☐ | ☐ | ☐ | |
| Are any of the valves/hoses clogged? | ☐ | ☐ | ☐ | ☐ | |
| How full is the tank? | | | | | |
| Question | Yes | No | NA | NE | Notes |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| Is the overflow device in need of repair? | ☐ | ☐ | ☐ | ☐ | |
| Is there evidence of erosion at the outlet? | ☐ | ☐ | ☐ | ☐ | |
| Is there evidence of debris or sediment in the overflow? | ☐ | ☐ | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |

**Rainwater Harvesting Inspection Form**

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| How is the harvested rainwater used? | | | | | |
| How often is the harvested rainwater used? | | | | | |
| What is the estimated available current storage capacity (% of system that is currently empty)? | | | | | |
| | | | | | |
| | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Source: United States Environmental Protection Agency (EPA). 2015. Guidance for Inspecting and Maintaining Green Infrastructure Practices. 2014 Green Infrastructure Technical Assistance Program, City and County of Denver and Denver Urban Flood Control District, Denver, CO. State of Washington Department of Ecology. Example Permeable Pavements Inspection Form. Herrera Environmental Consultants. http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/Resources/PermeablePavementInspectionForm.pdf

# Appendix AC –
# Green Roof Inspection Form

**Green Roof Inspection Form**

| Question | Yes | No | NA | NE | Notes |
|---|---|---|---|---|---|
| | | | | | |
| Are overflow drains, drain boxes, eves, and scuppers blocked, damaged or have accumulated organic matter deposits? | ☐ | ☐ | ☐ | ☐ | |
| Is there evidence of any leaks or cracks in the membrane? | ☐ | ☐ | ☐ | ☐ | |
| Is the flashing or caulking in need of repair? | ☐ | ☐ | ☐ | ☐ | |
| Is there standing water on the roof (at least 24 hours after a rain event)? | ☐ | ☐ | ☐ | ☐ | |
| Is there debris or sediment accumulation on the roof? | ☐ | ☐ | ☐ | ☐ | |
| Is there evidence of root penetration (e.g., water damage on the inside of the roof)? | ☐ | ☐ | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| Are there dead or diseased plants? | ☐ | ☐ | ☐ | ☐ | |
| Are there weeds, unwanted moss, invasive plants, or pests? | ☐ | ☐ | ☐ | ☐ | |
| Is there erosion or loss of media on the roof? | ☐ | ☐ | ☐ | ☐ | |
| Question | Yes | No | NA | NE | Notes |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | | | | | |
| | | | | | |

## Green Roof Inspection Form

| |
|---|
| |
| Source: United States Environmental Protection Agency (EPA). 2015. Guidance for Inspecting and Maintaining Green Infrastructure Practices. 2014 Green Infrastructure Technical Assistance Program, City and County of Denver and Denver Urban Flood Control District, Denver, CO. State of Washington Department of Ecology. Example Permeable Pavements Inspection Form. Herrera Environmental Consultants. http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/Resources/PermeablePavementInspectionForm.pdf |