

Contact Person	Sarah Morris-Benavides	Revision	1.1
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Ames Laboratory Spill Prevention, Control & Countermeasure (SPCC) Plan

Federal SPCC regulations (40 CFR Part 112) were created under the authority of the Clean Water Act. The stated purpose is "...to prevent oil discharges from reaching navigable waters of the United States or adjoining shorelines." In effect, the regulation serves to protect surface waters and groundwater in general throughout the country.

1.0 APPROVAL RECORD

- Reviewed by: Document Control Coordinator (Amy J. Tehan)
- Approved by: Quality Assurance Manager & ESH&A Manager (Tom E. Wessels)
- Approved by: Facilities & Engineering Services Manager (Mark E. Grootveld)
- Approved by: Chief Operations Officer (Mark L. Murphy)
- Approved by: Associate Laboratory Director for Sponsored Research Administration (Debra L. Covey)
- Approved by: Assistant Director for Scientific Planning (Cynthia J. Jenks)
- Approved by: Chief Research Officer (Duane D. Johnson)
- Approved by: Interim Deputy Director (David P. Baldwin)
- Approved by: Interim Director (Thomas A. Lograsso)

The official approval record for this document is maintained in the Training & Records Management Office, 151 TASF.

2.0 REVISION/REVIEW INFORMATION

The revision description for this document is available from and maintained by the author.

3.0 PURPOSE AND SCOPE

This plan documents the Laboratory's support for preventing oil spills/releases and countermeasures to navigable waters and the environment.

Plan requirements are intended to promote:

- Design and construction of facilities with features that will prevent discharges from occurring, and contain those that do occur;
- Training of key personnel for safe operations and spill emergency preparedness;
- Inspection of facility components to assure continued performance of spill prevention and control features; and
- Organizing information that will assist in spill prevention and spill response.

Certain facilities handling petroleum products (oil) are required to prepare and use a Spill Prevention, Control and Countermeasure (SPCC) Plan. Plans are required by federal regulations 40 CFR 112, under the Clean Water Act (CWA). "Oil" as defined under federal regulations includes petroleum oils, such as gasoline, diesel, kerosene and heating oil, as well as non-petroleum oils such as animal and vegetable oils, synthetic oils, and mineral oils.

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Currently, the State of Iowa does not have provisions regulating SPCC Plans; therefore, federal spill prevention and control guidelines pertain to the Ames Laboratory. As required by Title 40, Code of Federal Regulations (CFR), Part §112. This Plan has been prepared to document the equipment, workforce, procedures, and measures needed to control or provide adequate countermeasures to prevent an oil release from reaching navigable waters of the United States.

A plan is generally required for any facility with more than 1,320 gallons of aboveground oil storage capacity. If a plan is required for a facility, it is the responsibility of the owner or operator to provide a plan. The plan can be drafted by the owner or operator, or by a professional preparer.

4.0 ROLES AND RESPONSIBILITIES

Line management is responsible for assuring minimal environmental impact by the Laboratory's activities and for implementing the Laboratory's environmental protection requirements. All employees are responsible for performing their work in a manner that complies with established environmental protection requirements. Employees are encouraged to suggest improvements in the environmental protection program. They have the right to bring to the attention of their supervisors or ESH&A any condition they believe is environmentally unsound or out of compliance with applicable environmental laws, regulations or orders. This plan applies to all Ames Laboratory buildings and employees at the main campus and all spaces rented by the Laboratory.

- 4.1 **Director's Office:** Upper management is ultimately responsible for all environment, health and safety issues. Upper management will support the SPCC Plan and provide the necessary resources to support the SPCC Rule.
- 4.2 **Environment, Safety, Health & Assurance (ESH&A):** The environmental specialist, as part of ESH&A, is accountable for discharge prevention and reports to facility management.
- 4.3 **Facility & Engineering Services (F&ES):** F&ES will conduct inspections and/or secure contracts with outside vendors to inspect qualified oil-filled operational electrical equipment (i.e. elevators & transformers). F&ES will retain inspection tickets/logs. Appropriate personnel as designated by the F&ES manager will complete the institutional training as designated by ESH&A.

5.0 Facility Description:

Ames Laboratory is a Department of Energy (DOE) Office of Science National Laboratory located on the Iowa State University (ISU) campus in Ames, Iowa. Ames Laboratory is a government-owned, contractor-operated (GOCO) facility. ISU operates Ames Laboratory for the United States government under contract number DE-AC02-07CH11358 with the U.S. DOE. The DOE Office of Science, through the DOE-Ames Site Office, administers the contract. The buildings owned by the DOE are listed in section 11.

The primary function of Ames Laboratory is as a research and instructional institution. Ames Laboratory employs approximately 700 people, 400 full and part time employees and 300 associate (non-payroll) employees. The majority of activities at the Laboratory are for research and instruction; however, there are a few other support buildings and areas including a

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warehouse, paint shop, wood and sheet metal shops and a maintenance building.

- 5.1 **Site Location and Description:** Ames Laboratory is located in the north-west- corner of the ISU main campus in Ames, Iowa. Ames Laboratory owns 12 buildings and leases the land from ISU that the buildings are on. The Laboratory utilizes the University's electrical lines, storm sewer lines, sanitary lines and utility lines.
- 5.2 **Site Drainage:** Ames Laboratory buildings are located on ISU campus. There are four creeks that flow through the campus: Squaw Creek, Clear Creek, College Creek, and Worle Creek. Clear Creek, College Creek, and Worle Creek are all tributaries of Squaw Creek and flow east-northeast until intersecting Squaw Creek. Squaw Creek is a tributary of Skunk River flowing south-southeast until joining Skunk River east of campus (near US Highway 30 at the US Highway 69 exit). The general topography of the site slopes to the east toward Squaw Creek. The ISU campus has numerous storm sewer intakes to collect precipitation runoff. The storm sewer intakes, outfall to one of four creeks, eventually discharging to the Skunk River. Some of the storm sewer lines tie-in to City lines and some storm sewer lines discharge to ditches, which in general flow overland to the creeks.
- 5.3 **Oil Release Prevention Personnel:** The Environmental Specialist of Environment, Safety, Health and Assurance (ESH&A), is the primary Ames Laboratory employee accountable for oil discharge prevention at the facility. The ESH&A Manager and the F&ES Manager would always be notified of any discharge events as well.
- 5.4 **Release History:** Ames Laboratory has experienced only minor oil discharges (<2 gallons) from May 2, 2000, (§112.7(a)) the date of this plan.
- 5.5 **Facility Response Plan:** According to §112.2.0, Appendix C the Ames Laboratory is not required to submit a Facility Response Plan as the facility does not have the storage capacities per §112.2.1 and 2.2, Appendix C.

6.0 Discharge Predictions & Spill Containment

This section discusses the most common types of activities conducted at Ames Laboratory that have the potential for oil releases. Section 12, Attachments contains an inventory list of oil filled equipment and oil storage \geq 55 gallon capacity. A detailed map of the Ames Laboratory facilities is provided in section 12, Attachments.

- 6.1 **Small Quantity Laboratory Use:** Ames Laboratory owns three research buildings (Spedding Hall, Wilhelm Hall and Metals Development) that use and store small quantities of oil (<5 gallon containers). Some of the laboratories have sanitary sewer floor drains and many have limited quantities of mitigation equipment for small spills. The potential for a spill from these areas leaving the building and entering a storm sewer inlet are extremely low.

These areas will not be discussed in further detail due to their limited risk and low volumes of petroleum based products.

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6.2 Large Quantity Laboratory Use: Some laboratories do use and store larger quantities of oil. Large quantity areas occur in the Metals Development Building where large pieces of equipment contain >55 gallons of oil. These areas could have one or two 55-gallon containers of stored oil.

Sanitary sewer floor drains in these rooms have been plugged. Active floor drains are more than 100 feet from stored oil and/or oil filled equipment.

The Laboratory is deviating from the integrity testing provision of §112.8(C) (6) for 55 gallon containers. The Laboratory will also utilize the Alternative Requirements to General Secondary Containment (§112.7(k) (2)). Occupants of these rooms will be responsible for monthly inspecting and retaining documentation of inspections for a period of three years. A monthly inspection ensures that any small leak that could develop in the container wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under §112.8 (c) (6) since it provides an appropriate and effective means of assessing the condition of the day tank and suitability for continued service. To minimize the potential impact of a spill/release sufficient spill containment materials are located in close proximity. If a spill occurred inside the building, the risk of the oil leaving the building is minimal. The primary risk of oil being released outside the building would be during delivery activities.

6.2.1 Recommended Procedures and Containment

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.
- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

6.3 Hydraulic Elevators: The Laboratory has 4 hydraulic elevators. Three of the elevators have lined piston holes with return sumps.

Active floor drains are within close proximity (12-100 ft.) of stored hydraulic oil. The Laboratory is deviating from the tank integrity testing provision of §112.8(C) (6).

The Laboratory will also utilize the Alternative Requirements to General Secondary Containment (§112.7(k) (2)) for the elevator reservoirs. Elevators and reservoirs are inspected monthly by an elevator contractor and/or Ames Laboratory Facilities & Engineering Services (F&ES) personnel. F&ES will retain inspection tickets/logs for a period of three years. A monthly inspection ensures that any small leak that could develop in the container wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the

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non-destructive shell evaluation component of integrity testing required under §112.8 (c) (6) since it provides an appropriate and effective means of assessing the condition of the day tank and suitability for continued service. To minimize the potential impact of a spill/release sufficient spill containment materials are located in close proximity. If a leak occurs an outside contractor is contracted to remove the faulty part and seal. Used oil is pumped out of the reservoir into empty drums and ESH&A is contacted for pickup. Fresh oil is brought into the area in 55-gallon drums and pumped into the reservoir.

6.3.1 **Recommended Procedures and Containment**

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.
- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

6.4 **Transformers/Switchgear/Substation:** Ames Laboratory has one pad-mounted transformer, which contains 205 gallons of oil and is located outside. The transformer is situated just west of the City of Ames substation.

There is a storm water drain located in the fenced in area of the City's substation. The drain is approximately 12 feet from the Laboratory's transformer. The drain leads to a pit that is pumped to a culvert that parallels the railroad tracks. Failure of the transformer would prompt F&ES to respond accordingly. Releases of oil from the transformer would generally soak into the surrounding rock or soil. Contaminated soil/rock would be cleaned up and disposed according to local/state/federal regulations. The Laboratory is deviating from the tank integrity testing provision of §112.8(C) (6). The Laboratory will also utilize the Alternative Requirements to General Secondary Containment (§112.7(k) (2) for the transformer. The transformer is inspected monthly by F&ES personnel. F&ES will retain inspection tickets/logs for a period of three years. A monthly inspection ensures that any small leak that could develop in the container wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under §112.8 (c) (6) since it provides an appropriate and effective means of assessing the condition of the day tank and suitability for continued service. To minimize the potential impact of a spill/release sufficient spill containment materials are located in close proximity.

6.4.1 **Recommended Procedures and Containment**

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.

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- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

6.5 **Emergency Generators:** Ames Laboratory has two emergency generators located in Wilhelm Hall in a restricted locked room. The generators are used for power generation in the event of an emergency and are tested monthly to verify that they are in proper working condition. The generators are diesel powered. Diesel fuel for the generators is stored in a day tank located inside Wilhelm Hall. Also, near the generators there is a 1,000 gallon aboveground storage tank (AST) located outside the building (see Above Ground Storage Tank section 7.5).

Active floor drains are more than 100 feet away. The day tank is a 55 gallon container that has secondary containment.

Ames Laboratory is deviating from the integrity testing provision of §112.8(C) (6) for the day tank as allowed by § 112.7 (2). F&ES personnel will perform monthly inspections of the day tank and FS will retain tickets/logs for a period of three years. A monthly inspection ensures that any small leak that could develop in the container wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under §112.8 (c) (6) since it provides an appropriate and effective means of assessing the condition of the day tank and suitability for continued service.

6.5.1 Recommended Procedures and Containment

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.
- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

6.6 **Above Ground Storage Tanks:** Ames Laboratory has one aboveground storage tank (AST). It is a 1,000 gallon diesel fuel storage tank for backup generators located in Wilhelm Hall.

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The tank is located outside. The closest storm water drain is approximately 90 feet from the AST. The AST is a double-walled tank filled with concrete and has a safety fence and bollards. It is also equipped with an audible over-fill alarm and sump.

Ames Laboratory is deviating from the integrity testing provision of § 112.8(C) (6) for its AST as allowed by § 112.7 (2). The AST is inspected monthly by FE&S personnel. F&ES will retain inspection tickets/logs for a period of three years. Personnel performing these inspections are knowledgeable of the type of AST and its associated components, as well, the characteristics of the stored product. The configuration of the AST is such that all sides are visible. A monthly visual inspection ensures that any small leak that could develop in the tank wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under § 112.8(c)(6) since it provides an appropriate and effective means of assessing the condition of the fuel tanks and suitability for continued service.

6.6.1 Recommended Procedures and Containment

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.
- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

6.7 **Maintenance Areas:** The Mechanical Maintenance Building (MMB) contains 55 gallon drums of petroleum products. The building is locked and accessibility is limited to individuals with keyed access.

The building has sanitary sewer floor drains and a sump, so there is the potential for sanitary and/or storm sewer releases from spills inside the building. Potential for spills around the exterior of the buildings is very limited as oil is rarely transported from the building. Drums have secondary containment.

Ames Laboratory is deviating from the integrity testing provision of § 112.8(C) (6) for these drums as allowed by § 112.7 (2). Drums are inspected monthly by F&ES personnel. F&ES will retain inspection tickets/logs for a period of three years. A monthly visual inspection ensures that any small leak that could develop in a drum wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under § 112.8(c) (6) since it provides an appropriate and effective means of assessing the condition of the drums and suitability for continued service.

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6.7.1 Recommended Procedures and Containment

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.
- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

6.8 Waste Handling Operations: Ames Laboratory is responsible for waste collection, segregation, treatment (if applicable), and disposal. The waste is collected from individual labs and maintenance areas from Ames Laboratory owned buildings. Small amounts (< 4 liters) of chemicals including oil are transported manually using a cart to the Laboratory's storage area (B55 Spedding Hall).

There are no active floor drains in the room or in close proximity.

Ames Laboratory is deviating from the integrity testing provision of § 112.8(C) (6) for 55 gallon drums as allowed by § 112.7 (2). Drums will be inspected weekly by Ames Laboratory personnel. ESH&A will retain inspection logs for a period of three years. A monthly visual inspection ensures that any small leak that could develop a drum wall will be detected before it can become significant and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under § 112.8(c) (6) since it provides an appropriate and effective means of assessing the condition of the drums and suitability for continued service. Solvents are bulked into a 55 gallon drum that is poly lined and is located in a NFPA rated fire cabinet with secondary containment. The room and drum are inspected weekly. The room also contains adequate spill containment materials.

6.8.1 Recommended Procedures and Containment

- Place adequate absorbent materials or spill kits in readily accessible locations near areas with large quantities of oil.
- Train appropriate Ames Laboratory personnel to respond appropriately to small spills.
- Arrange for an outside contractor to respond to larger spills.
- Place covers over drains located near oil storage or waste transport areas.
- Display release response procedures and emergency contact numbers in each area.

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7.0 Spill Response

The Laboratory has an established spill response procedure outlined in the Ames Laboratory Emergency Plan (Procedures and contacts for spill response, cleanup and reporting are in the Emergency Plan Implementation Procedure (46300.010)).

The Laboratory has security personnel onsite 24/7. In the event of a release security personnel are trained to notify the appropriate person(s).

8.0 Training and Inspection (40 CFR 112.7(f))

Facilities and Engineering Services personnel, Materials Handling personnel and other Laboratory personnel that handle and/or has equipment that have the capacity to contain large (\geq 55 gallons) amounts of petroleum based products are trained on the contents of this plan and procedures for preventing, controlling, countering, and reporting oil spills.

9.0 Record Keeping

9.1 Training Records

Copies of each employee's training records and SPCC Plan review acknowledgement will be filed in the Ames Laboratory's Training Office (151 TASF), for the duration of the employee's employment, and a minimum of three years thereafter.

9.2 Release Report Records

Copies of all release report forms and records for all noted equipment deficiencies and corrective actions completed will be recorded and filed at the facility for a minimum of three years, as required by 40 CFR § 112.7(8).

9.3 Safety Data Sheets (SDS)

Users of oils and chemicals shall be responsible for maintaining copies of SDS and users shall be able to retrieve SDS in a timely fashion when requested.

10.0 REPORTING

In accordance with Rule 567 chapter 131, *Notification of Hazardous Conditions*, of the Iowa Administrative Code, if there is a release of a hazardous substance (oil or other petroleum-based fluid) onto the land, into the waters of the state, or into the atmosphere, the IDNR must be contacted (515-725-8694) regardless of the amount as soon as possible, but not later than six hours after the onset or discovery of the release. When reporting a release, record the name of the individual to whom the information was provided.

1. The following information should be provided (§112.7(a)(3)):

- a) The exact location of the release.
- b) The time and date the release was discovered and the approximate time of the initial release.
- c) The type of substance, volume, and manufacturer's name of released material.
- d) The medium (land, water, and/or air) affected by the release.
- e) The cause of the release.

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- f) Damages or injuries caused by the release.
- g) Actions taken or in progress to stop, remove, or mitigate the effects of the release.
- h) Whether an evacuation may be needed.
- i) The names of individuals and/or organizations who have also been contacted.
- j) The name, address, and telephone number of the responsible party.
- k) The name, address, and telephone number of the person who reported the release.
- l) The weather conditions and any other information that may assist in the evaluation of the release.

A written report containing the information listed above shall be submitted to the IDNR within 30 days of the release. The IDNR must also be informed in writing of all subsequent findings and laboratory results.

If a release reaches a navigable water of the United States or adjoining shorelines, the National Response Center (800-424-8802) must be contacted immediately and provide them with the information outlined above.

All spills and release shall be reported to the Ames Laboratory ESH&A Office for categorization and DOE reporting, if necessary.

11.0 REFERENCES & REGULATORY DRIVERS

- 40 CFR Part 112
- IAC 567 Chapter 131

12.0 Attachments

- a) Inventory
- b) Site Map