Department of Energy

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OCT 2 7 2017

Mr. Michael S. Strickland, Director
Prime Contract Management
Fluor Federal Services, Inc.
P.O. Box 369
Kevil, Kentucky 42053

PPPO-02-4430174-18

Dear Mr. Strickland:

CONTRACT NO. DE-EM0001131, TASK ORDER DE-DT0007774: APPROVAL OF SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN, PAD-REG-1005/R2

Reference: Letter from M. Strickland to M. Fultz, "Fluor Federal Services, Inc., Paducah Deactivation Project Deliverable No. 101.26—FINAL *Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site, McCracken County, Kentucky,* PAD-REG-1005/R2," (FPAD-18-3237), dated October 16, 2017

The U.S. Department of Energy has reviewed the resubmittal of the Spill Prevention, Control, and Countermeasure Plan and hereby approves the deliverable as submitted. If you have any questions or require additional information, please contact Dave Dollins at (270) 441-6819.

Sincerely,

Marcia D. Fultz
Contracting Officer
Portsmouth/Paducah Project Office

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PAD-REG-1005/R2

Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site, McCracken County, Kentucky

This document is approved for public release per review by:

David Hayden — 10-16-17

FPDP Classification Support — Date

PAD-REG-1005/R2

Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site, McCracken County, Kentucky

Date Issued—October 2017

Prepared for the
U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FLUOR FEDERAL SERVICES INC.,
Paducah Deactivation Project
managing the
Deactivation Project at the
Paducah Gaseous Diffusion Plant
under Task Order DE-DT0007774

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PROFESSIONAL ENGINEER'S CERTIFICATION [40 *CFR* § 112.3(d)]

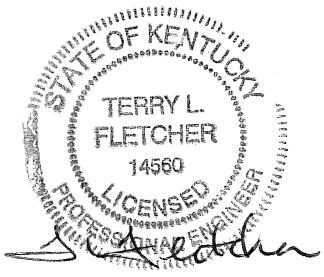
By means of this certification, I attest that I am familiar with the requirements of this part; that I or my agent has visited and examined the facility; that this Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and with the requirements of 40 *CFR* Part 112; that procedures for required inspections and testing have been established; and the plan is adequate for the facility.

Terry Fletcher

Terry Fletcher, P.E.
KY Professional Engineer # 14560

10/16/17
Date

SEAL



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MANAGEMENT APPROVAL (40 *CFR* § 112.7)

This Spill Prevention, Control, and Countermeasure (SPCC) Plan was prepared in accordance with good engineering practices and has the full approval of the U.S. Department of Energy (DOE); Fluor Federal Services, Inc., Paducah Deactivation Project; and Swift & Staley Team. Implementation of this plan minimizes the potential for discharges of oil and oil-related products at the DOE Paducah Site located in McCracken County, Kentucky. Management will make available personnel, equipment, and materials necessary to implement this SPCC Plan and control and mitigate any discharges that should occur. The priorities of response team members are based upon protection of human life, prevention of environmental harm, and protection of property, respectively.

This SPCC Plan will be reviewed and evaluated at least once every five years. This review will be documented in the SPCC Plan Management Review Record located on the following page of this SPCC Plan and will include a statement as to whether the SPCC Plan will be amended. Any technical amendments to the SPCC Plan will be certified by a professional engineer.

Paducah Site management is fully committed to the proper implementation of this SPCC Plan.

Bruce M. Ford/Fluor Federal Services, Inc. Acting Environmental Management Director	10-16-2017 Date Signed
Bobby D. Smith/Fluor Federal Services, Inc. Program Manager	10/16/2017 Date Signed
Tammy Courtney/Swift & Staley Team Project Manager	10-16-17 Date Signed
Jennifer Woodard/DOE Portsmouth/Paducah Project Office, Paducah Site Lead	11/1/2017 Date Signed

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SPCC PLAN MANAGEMENT REVIEW RECORD

(40 *CFR* § 112.5(b))

I have completed review and evaluation of the SPCC Plan for the Paducah Site and ___will ___will not amend the SPCC Plan within six months of the date of my review.

Signature	Date Signed
Printed Name	Title

I have completed review and evaluation of the SPCC Plan for the Paducah Site and ___will ___will not amend the SPCC Plan within six months of the date of my review.

Signature	Date Signed
Printed Name	Title

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CONTENTS

ACRONYMS

API	American Petroleum Institute
AST	aboveground storage tank
BMP	best management practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
CWA	Clean Water Act
DOE	U.S. Department of Energy
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
ERO	Emergency Response Organization
E-Squad	Emergency Squad
FPDP	Fluor Federal Services, Inc., Paducah Deactivation Project
FRP	facility response plan
IC	incident commander
ISMS	Integrated Safety Management System
KDEP	Kentucky Department for Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
KRS	Kentucky Revised Statute
LEPC	Local Emergency Planning Committee
OCB	oil circuit breaker
OSRO	oil spill response organization
OSHA	Occupational Safety and Health Administration
PA	public address system
PGDP	Paducah Gaseous Diffusion Plant
PPE	personal protective equipment
PSS	Plant Shift Superintendent
RCRA	Resource, Conservation, and Recovery Act
RQ	reportable quantity
SPCC	spill prevention, control, and countermeasure
STI	Steel Tank Institute
TSCA	Toxic Substances Control Act
UL®	Underwriters Laboratories Inc.®
USEC	United States Enrichment Corporation
WKWMA	West Kentucky Wildlife Management Area

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1. INTRODUCTION

The Paducah Gaseous Diffusion Plant (PGDP) is a government-owned plant that was constructed in the early 1950s and was operated by the U.S. Department of Energy (DOE) and its authorized agencies for manufacturing enriched uranium. PGDP enriched uranium from the early 1950s until 2013, when the United States Enrichment Corporation (USEC) ceased production operations. On October 21, 2014, the lease between USEC and DOE ended, and the PGDP leased facilities were transferred back to DOE. DOE is currently in the process of removing hazardous materials, including various oil products, from PGDP; preparing buildings for demolition; and remediating of the soils and surface waters to allow the site to be used for other purposes.

The Paducah Site is located in a generally rural area of McCracken County, Kentucky, 10 miles west of Paducah, Kentucky, and 3.5 miles south of the Ohio River. The Paducah Site consists of the inactive uranium enrichment facilities and extensive support facilities. The plant is on a 3,556-acre DOE site comprised of the following: approximately 628 acres within a fenced security area, approximately 809 acres located outside the security fence, 133 acres of acquired easements, and the remaining 1,986 acres licensed to the Commonwealth of Kentucky as part of the West Kentucky Wildlife Management Area (WKWMA).

Federal and state regulations prohibit the unauthorized discharge of oil and oil products (e.g., gasoline, diesel fuel, fuel oil, synthetic oil, hydraulic oil, waste oil). The policy of DOE and its contractors/subcontractors is to handle all oil and oil products in a manner that prevents discharges and protects persons and the environment from harm. The purpose of this Spill Prevention, Control, and Countermeasure (SPCC) Plan is to form a comprehensive spill prevention program that minimizes the potential for discharges. This SPCC is prepared in accordance with 40 *Code of Federal Regulation* (*CFR*) § 112, *Oil Pollution Prevention*. This SPCC Plan guides DOE and Paducah Site contractor/subcontractor personnel on avoiding and responding to discharges of oil and oil products into the environment from site mission-related projects and activities. This SPCC Plan is available electronically; copies will be provided to other groups, as appropriate. This SPCC Plan has been prepared for remediation, deactivation, and infrastructure-related projects and activities at DOE PGDP. Swift & Staley Team has voluntarily agreed to comply with this SPCC Plan. Mid-America Conversion Services, LLC, is not required to have an SPCC plan because they do not meet the threshold requirements for oil.

1.1. GENERAL SPCC APPLICABILITY—40 *CFR* § 112.1

Requirements to prevent the discharge of oil and oil products into navigable waters of the United States are established in 40 *CFR* § 112. These regulations are applicable to facilities that have oil and oil products and that reasonably could be expected to discharge oil into navigable waters of the United States; that have an aggregate aboveground capacity of more than 1,320 gal (counting only containers of 55 gal or greater); or have an aggregate underground capacity of more than 42,000 gal [excluding tanks subject to underground storage tank regulations (40 *CFR* § 280–281) and permanently closed tanks].

40 *CFR* § 112 does not apply to any container with a storage capacity of less than 55 gal of oil or oil products. Although the regulations do not specifically define "container," they do define "bulk storage container" as "any container used to store oil" except for "oil-filled electrical, operating, or manufacturing equipment." This means that oil-filled electrical, operating, or manufacturing equipment containing 55 gal or greater of oil or oil products is subject to the general regulations in 40 *CFR* § 112.7, but not to the specific requirements for bulk storage containers in 40 *CFR* § 112.8.

As a non-transportation-related on-shore facility, PGDP engages in activities that reasonably could be expected to discharge oil and other hazardous materials into navigable waters of the United States and therefore is subject to the spill prevention requirements of 40 *CFR* § 112.

1.2. AMENDMENT OF THE SPCC PLAN—40 *CFR* § 112.5

This SPCC Plan will be amended when a change in the facility design, construction, operation, or maintenance materially affects its potential for a discharge as described in 40 *CFR* § 112.1(b). Examples of changes that may require amendment of the Plan include, but are not limited to the following:

- Commissioning or decommissioning containers;
- Replacement, reconstruction, or movement of containers;
- Reconstruction, replacement, or installation of piping systems;
- Construction or demolition that might alter secondary containment structures;
- Changes of product or service; or
- Revision of standard operation or maintenance procedures at a facility.

Additionally, the Plan must be reviewed and evaluated at least once every five years. As a result of the review and evaluation, the SPCC will be amended within six months of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will reduce the likelihood of a discharge. Amendments must be implemented as soon as possible, but not later than six months following preparation of the amendment. Amendments will be documented using the SPCC Plan Management Review Record included at the beginning of the SPCC Plan. A Professional Engineer must certify any technical amendment to the Plan in accordance with 40 *CFR* § 112.3(d). The certification is located at the beginning of this Plan.

2. GENERAL SPCC REQUIREMENTS—40 *CFR* § 112.7

2.1 MANAGEMENT OVERSIGHT AND APPROVAL—40 *CFR* § 112.7

Paducah Site management strongly supports the prevention of discharges of oil and oil products. This SPCC Plan has the approval of management at a level and authority to commit the necessary resources toward spill prevention. All Paducah Site personnel are informed that pollution prevention is an integral part of job performance and of their responsibility for reporting and, where appropriate, correcting conditions that could lead to a discharge. All Paducah Site personnel are expected to follow applicable procedures and perform their jobs in a manner to prevent oil and oil product discharges.

Each of the contractors at the Paducah Site is required to implement an Integrated Safety Management System/Environmental Management System (ISMS/EMS). The basic tenets of the ISMS/EMS are protection of the environment and conservation of resources. Implementing ISMS/EMS requires that regulatory compliance personnel review procedures and work instructions to ensure that any steps involving storage/transfers of oils or oil products include measures to protect the environment and minimize potential releases.

The Director of Environmental Management is responsible for development of the SPCC Plan and its implementation as a Paducah Site plan. Within the Environmental Management organization, Regulatory Compliance Specialists, knowledgeable about requirements related to discharge/spill prevention and response, are available to provide technical assistance to operating groups responsible for Paducah Site projects and activities. They also assist in developing training programs for employees related to discharge/spill prevention and response. Field walkdowns and assessments are conducted as an oversight measure to ensure compliance with the SPCC Plan. Discharge prevention also is a key element of the work control planning for facilities that store or use oil and oil products.

2.2 PLAN CONFORMANCE—40 *CFR* § 112.7(a)(1)

This SPCC Plan is written to comply with federal and state regulations requiring a written plan to prevent and respond to oil spills and releases. Spill and release prevention strategies are introduced in the SPCC Plan. The SPCC Plan also serves as a guide for PGDP personnel when responding to releases of oils or oil products. This SPCC Plan is maintained on-site and is readily accessible for use in emergencies and agency inspections.

Review and evaluation of the SPCC Plan are required every five years per 40 *CFR* § 112.5(b). Reviews will be documented on the SPCC Plan Management Review Record, located near the front of this SPCC Plan. The SPCC Plan will be amended within 6 months of a change in the facility's design, construction, operation, or maintenance that materially affects its potential for a discharge; the list of Incident Commander (IC) changes; the list of emergency equipment changes; or the SPCC Plan fails in an emergency. Technical amendments to the SPCC will be reviewed and approved by a licensed professional engineer.

The Paducah Site has containers, oil-filled electrical equipment, and other items containing oil or oil products with capacities of 55 gal or greater that are regulated under Resource Conservation and Recovery Act (RCRA) or Toxic Substances Control Act (TSCA). Spill prevention, controls, and countermeasures addressing temporary waste storage/accumulation areas [e.g., generator storage areas, 90-day accumulation areas, and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) storage areas] for oil containing RCRA/TSCA-regulated waste items are described in

Part G of the Contingency Plan of the Hazardous Waste Management Permit Application for the U.S. Department of Energy, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, CP2-ER-1125, *Fluor Federal Services, Inc., Paducah Deactivation Project Contingency Plan for Temporary Staging Areas at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, and CP3-WM-1037, *Generation and Temporary Storage of Waste Materials*.

2.3 PLAN DEVIATIONS—40 *CFR* § 112.7(a)(2)

The PGDP SPCC Plan does not deviate from the requirements of the rule. This plan follows and is aligned with the requirements of 40 *CFR* § 112.

2.4 FACILITY LAYOUT—40 *CFR* § 112.7(a)(3)

Appendix A includes figures and tables showing the locations of the oil and oil products at PGDP and provides information on the individual containers, their location with respect to site facilities, their capacity, and the drainage/outfall that oil most likely would migrate to during a spill. As part of the revision to the SPCC Plan, an oil inventory review was conducted in 2017. The current oil and oil product capacity at PGDP is greater than one million gal. This inventory/capacity is described in the following subsections.

2.4.1 Description of Oil Storage—40 *CFR* § 112.7(a)(3)(i)

The Paducah Site uses bulk oil and fuel storage tanks, large oil-filled electrical transformers, and other oil-filled equipment. Hazardous waste storage and treatment areas also are in operation. All storage tanks are labeled according to criteria set forth in Occupational Safety and Health Administration (OSHA) 29 *CFR* § 1910.1200. All major storage tanks either are diked or of double-wall construction for spill control. In accordance with applicable regulatory requirements, hazardous waste accumulation areas also use containment dikes and other material control provisions.

One major location receiving oil products at the Paducah site is located at the C-600 Steam Plant. The C-600 Steam Plant was a coal, fuel oil, and natural gas-fired boiler plant that produced steam for the facility. In 2015, the two coal/fuel oil-fired boilers and one fuel oil/natural gas-fired boiler were replaced with five low and ultra-low emission package boilers. All five package boilers operate on natural gas; two of the boilers can also operate on fuel oil on an as needed or emergency basis such as natural gas curtailment. Two 420,000-gal tanks (C-601-A and C-601-B) are located at the facility and are built to American Petroleum Institute (API) Standard 650. The C-601-B tank is used to charge a 500-gal day tank, which is connected to the two package boilers that can operate on fuel oil. The 500-gal day tank is dual-walled with no dike. The C-601-A tank no longer is used for oil storage, but serves as emergency containment for the C-601-B tank in the event of a leak. Both tanks are located within a containment structure consisting of an earthen dike lined with a synthetic material impervious to oil.

The C-601-B tank currently is partially filled and contained approximately 111,500 gal of fuel oil at end of 2016. The C-601-B tank inventory represents the largest single accumulation of oil at the site and the highest risk for and impact from a potential release. Based on current use projections for the two package boilers that can use fuel oil on an emergency basis, no additional fuel oil shipments are anticipated.

A 6,000-gal tanker truck would replenish the C-601-B tank if required. The location where fuel is transferred from the tanker truck is not diked. Personnel are instructed to use drop pans or buckets under

connections to capture any released material during transfer. Additionally, site personnel provide continuous monitoring of the transfer operation, adhering to controlling procedures.

In addition to the C-600 facility, other systems located throughout the facility pose a threat of a release of material due to routine operations and maintenance activities. Activities may include transfer of material from one tank to another, the recycling of oil within a system, or the transfer of material from a system or tank into containers or equipment.

Two aboveground storage tanks (ASTs) are located at the C-752-B facility, which serves as a satellite refueling station for mobile plant equipment. The two 4,000-gal Underwriters Laboratories Inc.® (UL®)-listed, dual-wall tanks are located on the concrete-bermed C-752-B pad. Each tank contains an interstitial leak detection device, which is a continuous monitor with visible and audible alarms. Both tanks have a capacity of 4,000 gal; however, each tank is split internally into a 3,000 gal and a 1,000 gal tank to allow the tank to hold two different types of fuel at the same time. One tank contains E85 and unleaded gasoline; the other tank contains on-road and off-road diesel. The second wall of the tanks is sufficiently impervious to contain oil per 40 *CFR* § 112.7(c)(l)(i) requirement for secondary containment. Additional containment is provided by the bermed concrete pad, and absorbent materials are available as a backup/defense in depth. Precipitation that accumulates on the pad is examined prior to manual discharge to ensure no oily products are discharged. Personnel are instructed by posted signs to use portable containment pans below the filling point each time a vehicle or piece of equipment is refueled. These tanks are operated, maintained, and inspected by the Infrastructure Contractor.

Two 1,000-gal gasoline ASTs are located at C-333 and C-337. The tanks are designed with double-wall construction and leak-detection monitors for the interstitial space; each AST is also equipped with an overfill prevention valve. Fuel facility personnel monitor the filling operations to identify potential for and prevent overfills. Personnel are instructed to use drop pans or buckets under connections to capture any released material during transfer. Additionally, site personnel provide continuous monitoring of the transfer operation, adhering to controlling procedures.

Eighteen diesel ASTs are located at C-200, C-310, C-331, C-333, C-335, C-337, C-600, C-607, C-611, C-611-U, C-631-1, and C-631-3, each equipped with an overfill prevention valve. Appendix A includes the specific capacity and status of each of these tanks. Fuel facility personnel monitor the filling operations to identify potential for and prevent overfills. The tanks are designed either with double-wall construction with leak detection monitors for the interstitial space or have diked secondary containment. The tanks are filled via tanker truck; the location where fuel is transferred from the tanker truck is not diked. Personnel are instructed to use drop pans or buckets under connections to capture any released material during transfer. Additionally, site personnel provide continuous monitoring of the transfer operation, adhering to controlling procedures.

Three ASTs located at C-333-A, C-337-A, and C-360 contain hydraulic oil; each of these tanks is located within bermed containment dikes.

Two fuel tanks are located at C-746-U. The 1,000-gal and 500-gal tanks located outside at C-746-U are manufactured by ConVault® and are UL® listed. Each system consists of a primary steel tank and secondary containment consisting of a 30-mil (0.78-millimeters)-thick polyethylene membrane enclosing the steel tank and insulation material. The primary steel tank and the secondary containment are encased in 6 inches of reinforced concrete, but no steel or insulating material comes in contact with the concrete. The tanks located at C-746-U are provided with a UL®-listed spill containment system that includes a normally closed valve to release any spilled product from refilling into the primary steel tank. The C-746-U area, including the location of the diesel and gasoline tanks, drains to a man-made sedimentation basin. Runoff of precipitation is accumulated in the sediment basin and manually discharged directly to

Outfall 019 when the basin nears capacity. The accumulated water will be examined before discharge to Outfall 019 to ensure that no oil is discharged. The basin is discharged and monitored for compliance against KPDES permit conditions.

Transformer oil and oil circuit breaker (OCB) oil tanks are located at the C-531, C-533, C-535, and C-537 switchyards. The C-535 and C-537 switchyards no longer are energized. Additionally, storage tanks for transformer and OCB oils are located at C-540 and C-541; these tanks are located within concrete dikes fitted with drain valves. While not considered bulk storage tanks, electrical transformers, circuit breakers, and other electrical devices located in the four switchyards at the Paducah Site are listed in Appendix A, with the specific capacity of each of these equipment types since they are considered oil-filled operational equipment. This equipment includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the equipment. The equipment is located outdoors and does not have secondary containment due to electrical hazards associated with accumulated water in switchyards. If required, oil is delivered to these tanks by tanker truck or via piping systems between the storage tanks and the switchyards. Switchyard areas, including tanker truck loading/unloading areas and piping associated with switchyard equipment, do not have secondary containment dikes, but do flow into facility drainage systems that are equipped with engineered, oil diversion/retention structures. Underflow dams designed to permit the passage of water but contain floating materials, such as oil, have been constructed in the Paducah Site drainage ditches with the potential to receive an oil discharge. The dams are designed to provide effective oil containment. Spill control materials, such as oil pans and absorbent pads, are located at the switchyards to control drips and spills.

There are 67 polychlorinated biphenyl (PCB) transformers located in C-337. Transformers are considered to be oil-filled operation equipment. As part of the DOE efforts to remove significant volumes of oil from the PGDP, these transformers have been drained.

Hazardous Waste Management Facility Permit KY8-890-008-982 applies storage capacity restrictions to the three permitted waste storage facilities at C-733, C-746-Q, and C-752-A. All three facilities have secondary containment and are permitted to store waste oils. The C-733 facility is a partially enclosed facility that has a maximum container storage capacity of 38,500 gal and can store all hazardous waste as listed in the permit. The C-746-Q facility maximum waste storage capacity is 306,570 gal; C-746-Q can store all wastes listed in the permit, except for Hazardous Waste Code D001. No ignitable wastes can be stored at C-746-Q. The C-752-A facility has a maximum container storage capacity of 496,000 gal. All waste streams can be stored at C-752-A, except for flammable wastes with a flash point $< 100^{O}F$. Ignitable wastes may be stored at C-752-A with a flashpoint between $100^{O}F$ and $140^{O}F$. The permitted storage facilities capacities are counted as capacity because they are permitted to store waste oils.

A 250-gal AST at C-540 is used to hold kerosene. The tank is carbon steel and located in bermed secondary containment. A 150-gal tank at C-755-Y is used to hold used oil. Secondary containment is integrated into the tank design. A 330-gal UN31A poly-tank at C-750 is used to hold used oil; the tank is located within secondary containment. Additionally, eight 55-gal drums of new oil are routinely stored in C-750 for vehicle maintenance.

Two 500-gal ASTs are located at C-746-A and were used to hold gasoline and diesel. The tanks are located within bermed secondary containment. These tanks have been drained and have not been used since approximately 2001.

The process building lube oil systems including all supply and drain tanks have been drained. The lube oil system in each process building has tanks that were used for reservoirs. The C-310 and C-315 Buildings have one supply tank located on the cell floor and one drain tank located on the ground floor. The C-310-A supply tank has been drained and flowable fill added to the tank and piping trench. Each of the

C-331 and C-335 Buildings has 4 drain tanks located on the ground floor and 4 supply tanks located on the cell floor. Each of the C-333 and C-337 Buildings has 12 drain tanks located on the ground floor and 6 supply tanks located in housing on the building roofs. The lube oil flowed from the supply tanks though the associated lubricating points throughout each facility to the drain tanks. The oil then was pumped back to the supply tank. All of the lube oil drain tanks are diked. During operations, any oil spill would have been contained inside the dikes and inside of the process buildings. Even under operational conditions, a lube oil spill that would migrate outside the building and to navigable waters was highly unlikely.

The lube oil systems pose virtually no threat as currently configured. The motor couplings for all process lube and hydraulic system pumps have been removed. Suction piping has been removed to the hydraulic pumps and sight glasses. Holes were drilled at system low points and the drain tank flanges were removed to facilitate system drainage and to ensure that no accumulation of oil could occur. Funnels located on the cell floor and that were previously used to return accumulated oil from maintenance or housekeeping activities to the lube oil systems are locked. Each facility lube oil pipe connection formerly used to add bulk oil from a vendor truck to each lube oil system has a blank flange installed. Each unit lube oil system is independent of the other except for the bulk oil fill piping which connects to the top of each of the system drain tanks. While no accumulated oil is present in any process lube or hydraulic oil system, it would be impossible to backflow oil from one system to the other in the present system configuration. In order to put oil back in the system, some physical control must be violated.

A lube oil skid system for the purge and evacuation pumps has been installed in C-335 and in C-337. Each lube oil skid system has a capacity of 300 gal. They are located inside the process buildings.

The C-611 facility has a 1,500 gal diesel AST which is used to power the #4 and #5 diesel drive pumps. Other oil filled operational equipment at C-611 includes the #7 pump with a 450-gal diesel tank. The C-611-U facility has a diesel generator with a 450 gal diesel tank. The tank and equipment are kept in standby in the event of power failure.

Heavy equipment may be staged between projects at C-745-C in the center of PGDP. This storage yard drains to Outfall 001, which is protected with an underflow dam. Equipment staged for long periods will be drained of oil/oil products to the extent practical prior to placing in storage.

Heavy equipment may be stored in the C-740 yard that drains to Outfall 008. Heavy equipment also may be staged at C-750 and C-755. The C-755 storage area is located on the east side of the plant and drains to Outfalls 002 and 010. The C-750 storage area is located in the center of the plant and drains to Outfall 008. These Outfalls are equipped with oil containment dams. Spilled materials from these areas will be contained and collected upstream from the oil containment dams.

Other tanks and equipment on-site that typically contain 55 gal (or greater) of oil products include mobile equipment/vehicles and temporarily located equipment (e.g., generators). In addition, fuel tanker trucks periodically come on-site to refill on-site tanks and equipment. These mobile and temporary items range over a wide on-site area or are not at one location for a substantial period of time. When practical, temporary storage of equipment is done on temporary secondary containment. Transfer of fuel and fueling of mobile vehicles/equipment is performed over drip pads/pans to the extent practical.

2.4.2 Discharge Prevention Measures—40 *CFR* § 112.7(a)(3)(ii)

The handling of oil and oil products is addressed in policies, programs, procedures, and work control documents. Discharge prevention measures begin with management commitment to prevent discharges that may harm workers, the public, or the environment. Workers are trained to perform oil/oil product

loading, unloading, and transfers in accordance with management-approved procedures and to recognize and appropriately respond to leaks, spills, and releases.

For example, controls for the C-601-B fuel oil tank are detailed in CP4-UT-0501, *No. 2 Fuel Oil Handling and Storage*. These controls include the following:

- Pre-loading tank level check with recorded verification of adequate capacity for delivery;
- Using a spotter at the unloading station to prevent accidents or contact between the tank and the tanker truck;
- Recording date, truck time in, ticket number, and net gal on Fuel Deliveries Form (CP4-UT-0501-F01);
- Chocking tanker truck wheels;
- Isolating other vehicle traffic from pump house;
- Connecting the truck to unloading station nozzle, being sure to place drip pans or buckets under connections;
- Connecting ground cable;
- Managing valves to specific, detailed instructions in the procedure;
- Communicating with tanker truck driver during unloading process;
- Monitoring unloading continuously for flow, evidence of leaks, and tank level;
- Visually inspect dike and tank area for leaks before, during, and after unloading; document on Fuel Deliveries Form;
- Following unloading, disconnect lines, draining hoses into buckets as needed.

The C-601-A and C-601-B tanks and other site ASTs have compliant secondary containment, either through dikes/curbing or dual-wall construction. Additionally, some tanks are equipped with overfill prevention valves. Larger site storage tanks generally are filled via 6,000-gal tanker truck from a local vendor. Fuel oil is delivered by the project to several small fuel tanks dispersed throughout the site to provide fuel for emergency generators. The areas where the tanker or transfer trucks sit during offloading are not diked; therefore, personnel are instructed to use drip pans or buckets under connections to capture any released material during transfer. Additionally, site personnel provide continuous monitoring of the transfer operation, adhering to controlling procedures.

The gasoline ASTs located at C-333 and C-337 are equipped with an overfill prevention valve. Fuel facility personnel monitor the filling operations to ensure there are no overfills. The area where the tanker truck sits during transfer of fuel is not diked.

The C-752-B Fueling Station tanks are contained by a bermed concrete pad. The fuel dispensing station at C-752-B has spill detection alarms and automatic shut-off devices. The area where the tanker truck sits during transfer of fuel is not diked; however, the delivery truck is designed with secondary containment

around the hose connections, and there is secondary containment where the hoses are connected to the tanks.

Surveillance and Maintenance delivers diesel fuel to several small tanks dispersed throughout the site. Each of these tanks supplies fuel for emergency generators around the plant. Each of these tanks is diked; however, the area in which the bulk truck sits during transfer is not diked.

2.4.3 Discharge or Drainage Controls—40 *CFR* § 112.7(a)(3)(iii)

All oil storage tanks at PGDP are provided with secondary containment. Secondary containment areas located outside will hold at least 110% of the largest tank in the containment area. This will allow enough containment capacity for both expected rainfall and the entire contents of the tank. Secondary containment areas located inside the buildings will hold 100% of the largest tank in the containment area.

While not considered bulk storage tanks, electrical transformers and circuit breakers located in the four switchyards at PGDP are listed in Appendix A. This equipment is located outdoors and does not have secondary containment due to electrical hazards associated with accumulated water in switchyards.

Procedures establish the administrative controls and provide requirements and processes that govern installation, inspections, and generation of secondary containment systems. Each facility manager/operating group has the responsibility to control its environment and operations in such a manner as to prevent spills and discharges. To assist personnel in preventing spills or minimizing the effects of spills, procedures and work control documents are prepared for operation of equipment, handling of materials and wastes, and cleanup and containment of spills. Inspection techniques and frequencies for bulk storage containers, equipment, and containment dikes also are specified in procedures, work control documents, or other guidance. Appendix B contains examples of the inspection checklist used to inspect secondary containment areas. Records of these inspections are maintained in accordance with the Fluor Federal Services, Inc., Paducah Deactivation Project (FPDP) Records Management Program.

Procedures control the filling and transfer of oil products, as discussed in Section 2.4.2. Underflow dams designed to permit the passage of water but contain floating materials, such as oil, have been constructed in the drainage ditches with the potential to receive an oil discharge. The dams are designed to provide effective oil containment and were installed on ditches to 8 of the 15 outfalls, specifically Outfalls 001, 002, 008, 009, 010, 011, 012, and 015 (those most likely to be impacted by an oil spill), to contain the oil on facility property and prevent it from reaching Bayou or Little Bayou Creeks.

Major drainage ditches are equipped with inverted pipe dams designed to permit the passage of water but to contain floating material, such as oil. The dams are designed to provide effective oil containment in the event of a discharge. Furthermore, should a discharge reach a drainage ditch, inflatable pipe stoppers are available to fit any of the culverts in these ditches. Discharges can be contained within PGDP, if acted upon quickly. Booms and absorbent pads used to cleanup spills on-site also can be used to prevent off-site release when used in the creeks in the unlikely event a spill reaches the creeks.

Outfalls are checked on a daily basis per CP4-UT-0405, *Utilities Routine Duties, Checks, and Inspections*, with requirements to check for oil sheen. This procedure also provides for the inspection and draining of storage tank containment dikes. Checking for evidence of a spill, such as sheen, leak, or discoloration, is required, and the integrity of the dike, including drain piping, valve, and cap/plug, is visually inspected. The results of the inspections are noted on the area Narrative Log. If the diked area shows evidence of a spill, the dike is not to be drained, and the Plant Shift Superintendent (PSS) is called to determine the path forward with appropriate input from Regulatory Compliance.

2.4.4 Countermeasures, Response, and Cleanup—40 *CFR* § 112.7(a)(3)(iv)

Plant procedures contain the reporting process to be followed should a spill occur. All spills are to be reported immediately to the PSS. The PSS directs the emergency containment of any spill that may egress the building or immediate area or have the possibility of entering the environment and also direct initial cleanup operations. The PSS determines reportability of any spill with assistance from Regulatory Compliance as needed.

PGDP operates 24 hours a day, 7 days a week, with emergency response personnel on duty during this time. The Fire Services and Protective Force personnel are on duty, and each organization will perform its appropriate duties during an emergency situation. The Emergency Squad (E-Squad) also is on duty 24 hours a day, 7 days a week, and will respond to an emergency situation as directed. While members of the Emergency Operations Center are not on duty 24 hours a day, 7 days a week, they are on call during off-shift hours and carry cell phones for emergencies. Initial oil response equipment at PGDP includes an oil skimmer, containment booms, and other miscellaneous equipment to help support an oil spill emergency. An agreement has been established with an oil spill response organization (OSRO) for emergency oil spill response. The PSS has the authority to contact the OSRO as required.

Response to oil spills is controlled by CP3-EP-1007, *Oil and Hazardous Materials Spills and Releases*, this SPCC Plan, and by the PGDP Facility Response Plan (FRP). Upon the reporting of a spill/discharge, the PSS serves as or appoints the on-scene IC. The IC will direct the emergency containment of any spill/discharge that may egress a building or immediate area or have the possibility of entering a plant drainage ditch. The PSS has the authority to call for assistance from the OSRO or other Mutual Aid Agencies as required. The PGDP FRP describes the response actions for small and medium discharges as well as the worst case scenario discharge. Emergency response personnel, spill cleanup equipment, communication systems, and external agency coordination are maintained and available on-site to respond to minor spills/releases. Minor spills are cleaned up quickly by operating personnel.

Upon discovery of a release of oil, the following immediate actions shall take place.

- Person discovering spill shall notify the PSS.
- PSS will notify the Plant E-Squad to report to the spill area.
- PSS will notify the OSRO to respond, if required.
- All unnecessary personnel will be evacuated from the area.
- Efforts to shut off the source of the spill or to contain the spill within the area where the spill initiated will be attempted.
- PSS will dispatch E-Squad personnel to the outfall that will be affected by the spill, if appropriate.
- Oil booms will be placed across the outfall to contain the spill, if appropriate.
- Outfalls may be plugged with devices, if necessary, to prevent any flow of spilled material through the oil containment dams.
- Depending on the size of the spill, sources of surface and process water to the particular outfall will either be slowed or stopped.

- OSRO, if notified, will arrive on-site and begin mobilization of equipment for cleanup efforts.

- Notifications to regulatory and company authorities, as necessary, will be made by the PSS or designee as part of the initial immediate response actions.

Following containment, the cleanup of spill/discharge materials may be accomplished by using portable pumps, containers, and other equipment and materials. All cleanup wastes generated will be managed properly and disposed of in accordance with applicable regulations and Paducah Site procedures. The IC will follow this SPCC Plan and supporting procedures. The PSS tracks spills because the reportable quantity (RQ) is based on a 24-hour period. Spill emergency response includes collection and containment of spilled material, whereas emergency response under OSHA is limited to the containment of spilled material. Because the Paducah Site's emergency management organization is based on OSHA requirements, containment of a spill to the environment would be conducted by Fire Services and E-Squad personnel. Collection of the spilled material and residues may be conducted by other plant organizations, as required. Minor spills within indoor containment areas will be contained by the project. The PSS directs containment, treatment, and initial cleanup activities, with the assistance of other plant groups, until properly relieved of his duty. Should OSRO assistance be required to address oil spill response and cleanup, the OSRO would be under the technical direction of the PSS and IC. PGDP has a number of agreements with local and regional entities to provide and/or share support during emergency situations. The IC requests outside assistance in accordance with CP3-EP-1012, *Offsite Emergency Response Assistance.*

An emergency response vehicle is maintained at C-200 that contains absorbent pads, pillows, booms, and granular material that may be used to contain and cleanup oil from the ground, drainage ditches, or surface waters. Floating plastic booms may be used to divert or contain the flow of oil or oil products on surface waters. Inflatable pipe stoppers and spill cleanup kits also are stored in this vehicle. Self-contained breathing apparatus cylinders in the emergency response vehicle supply the inflating gas. Additional spill containment and cleanup materials are kept at locations throughout the Paducah Site near tanks and equipment listed in Appendix A.

Storage capacity for spilled material is available in the empty C-601-A 420,000-gal tank. In addition, the Paducah Site maintains poly tanks for spill control operations and other containers that could be used in an emergency.

2.4.5 Disposal of Recovered Materials—40 *CFR* §§ 112.7(a)(3)(v)

Management of waste materials associated with an oil spill is conducted per CP3-WM-1037, *Generation and Temporary Storage of Waste Materials.* Materials generated from a spill response may include wastes such as unusable product, personal protective equipment (PPE); wastewater from decontamination; RCRA hazardous, PCB, radioactive, or mixed wastes. Wastes transferred or moved within the facility boundary to respond to the release will not require permits but must comply with the on-site transportation plan. Wastes being shipped for off-site treatment and disposal will be transported in accordance with applicable state and federal U.S. Department of Transportation and environmental regulations.

Decontamination of equipment will be conducted near the spill site. A temporary decontamination facility will be constructed by placing an impermeable membrane on the ground (e.g., Hypalon), diking the perimeter of the membrane, and, if necessary, constructing curtains to contain water spray. Depending on the product, several techniques for decontaminating equipment will be employed. These techniques may include hand washing with water and detergents or power washing with water and detergents.

After spill containment, product will be salvaged, if possible, and returned to bulk storage for reuse. If salvage is not possible or if the product has been mixed with other liquids such as fire suppressants or water, liquids will be pumped into containers and characterized to determine disposal alternatives. Waste liquids will be characterized pursuant to RCRA requirements and, if necessary, be analyzed for RCRA constituents, PCBs, and radionuclides. Material classified as hazardous waste will be disposed of pursuant to RCRA requirements. Because of the potential for radionuclide contamination, additional characterization would be needed for off-site disposal.

Liquid wastes that are not hazardous (e.g., water used for decontamination) will be containerized. Disposal options may include, but will not be limited to, carbon filtration, treatment at PGDP's wastewater treatment plant, or treatment off-site.

All PPE and adsorbents will be containerized and characterized pursuant to RCRA requirements. If necessary, these materials will be analyzed for RCRA constituents, PCBs, and radionuclides. Disposal options may include, but will not be limited to, on-site treatment for discharge, disposal as solid waste in the on-site C-746-U contained landfill, on-site hazardous waste treatments, or off-site treatment/disposal.

Contaminated soils generated from the response activities will be characterized pursuant to RCRA. If necessary, soil will be analyzed for RCRA constituents, PCBs, and radionuclides. Disposal options for soil may include, but will not be limited to, bioremediation, thermal treatment, incineration, or disposal as solid waste in a contained landfill.

2.4.6 Contacts—40 *CFR* § 112.7(a)(3)(vi)

The PSS has full authority to use any means available to control and contain a spill. The PSS also has the authority to contact outside agencies for emergency response support.

Upon discovering a spill or release of petroleum or petroleum products, PGDP personnel are required by plant policy to contact the PSS via one of the following methods.

- Telephones—Telephones are located throughout the Paducah Site. An emergency situation can be reported to the PSS by dialing 333 or 6211 on the normal (BellSouth) system or 555 on the interplant PAX system. Emergency calls are answered by or at the C-300 Central Control Facility. Calls from cells phones should be made to (270) 441-6333.

- Two-Way Radios—Two-way radios are used by the PSS, Fire Services, Protective Force, and other response personnel to aid in emergency communication. Any radio at the Paducah Site can be used to summon emergency assistance by using the dedicated emergency channel (Channel 16). The C-300 Central Control Facility monitors radio communications on all radio channels used at the Paducah Site.

- Public Address (PA) System—The PA system is used to communicate emergency instructions to all personnel. The PSS is in charge of all announcements made on the PA system.

- Messenger—A messenger may be sent to the C-300 Central Control Facility to notify the PSS of an emergency, if this presents a faster means of notification.

The Emergency Response Organization (ERO) is a structured organization with overall responsibility for initial and ongoing emergency response and mitigation. The ERO consists of experienced and trained personnel with overall responsibility for initial and ongoing emergency response and mitigation. These personnel are specially trained to respond to different types of emergencies including oil and hazardous

substances discharges. The ERO establishes effective control at the scene of an event/incident and integrates ERO activities with those of local agencies and organizations that provide on-site response services. An adequate number of experienced and trained personnel, including designated alternates, are available on demand for timely and effective performance of ERO functions. The ERO members are required to participate in formal training (initial and refresher), drills, and exercises. Site-level ERO elements and resources participate in a minimum of one exercise annually.

During an actual emergency involving the discharge of oil that migrates from the facility and violates the requirements of Section 311 of the Clean Water Act (CWA), the PSS or designee will make the required notifications and complete the Oil Spill Response Notification Form as required by CP3-ES-0003, *Environmental Incident Reporting*. These required notifications will include the following organizations:

- U.S. Department of Energy, Paducah Site Office ..... (270) 441-6800
  After hours—Primary/Alternate DOE Facility Representative phone numbers on file with the PSS

- National Response Center ..... (800) 424-8802
  Kentucky Environmental Response Team ..... (502) 564-2380
  Alternate ..... (800) 928-2380

- Kentucky Emergency Response Commission ..... (800) 255-2587

- Kentucky Department for Environmental Protection ..... (270) 898-8468

- McCracken County Office of Emergency Management/Local Emergency Planning Committee (LEPC) ..... (270) 448-1530
  After hours 911

- Ballard County Office of Emergency Management/LEPC ..... (270) 665-9928

Organizations that might be notified in the event of an oil or hazardous substance release include the following organizations:

- U.S. Department of Energy, Headquarters Emergency Operations Center ..... (202) 586-8100

- OSRO
  SWS Environmental Services ..... (270) 908-3300
  SWS Environmental Services (Emergency after Hours) ..... (877) 742-4215

- U.S. Environmental Protection Agency Region 4 Air, Pesticides and Toxic Management Branch
  Leave voice mail, if necessary ..... (404) 562-9077

- U.S. Coast Guard (Paducah Branch) ..... (270) 442-1621
  Emergency number ..... (270) 217-0959
  Illinois-American Waterworks (Cairo, Illinois) ..... (618) 734-4671
  Locks and Dam No. 53 (Grand Chain, Illinois) ..... (618) 742-8286
  Olmsted Locks and Dam ..... (618) 742-6213
  Electric Energy Incorporated (Joppa, Illinois) ..... (618) 543-7531

- Kentucky State Fire Marshal ..... (502) 573-0382

- Kentucky State Police (Post 1) ..... (270) 856-3721
  Alternate (will not work with cellular telephone) ..... (800) 222-5555

- McCracken County Sheriff's Department ..... (270) 444-4719

- National Weather Service (NOAA Weather Radio) ..... (270) 744-6440
  Alternate ..... (800) 533-7189

- Massac County Illinois Emergency Management Agency (Day) ..... (618) 524-2002
  After Hours (Massac County Illinois Sheriff's Department) (618) 524-2912

- Illinois Emergency Management Agency Response 800-782-7860

- Emergency Alert System Activation
  National Weather Service (emergency activation use only) ..... (270) 744-8029
  National Weather Service (alternate—emergency activation use only)..... (270) 744-6331

2.5 DISCHARGE REPORTING—40 *CFR* § 112.7(a)(4)

This requirement is not applicable since the PGDP submitted an FRP in accordance with 40 *CFR* 112.20.

2.6 PLAN ORGANIZATION—40 *CFR* § 112.7(a)(5)

This requirement is not applicable since the PGDP submitted an FRP in accordance with 40 *CFR* 112.20.

2.7 POTENTIAL EQUIPMENT FAILURE—40 *CFR* § 112.7(b)

Appendix A contains listings of major equipment where there is a potential for failure that would result in a release of oil or hazardous materials. The lists include equipment description, location, capacity, and plant drainage areas most likely to be impacted. Appendix A also includes corresponding diagrams depicting the direction of flow for the plant drainage systems and outfalls. All outfalls serving drainage areas with the potential for oils spills due to equipment failure are equipped with underflow dams designed to prevent the oil from leaving the facility; therefore, flow rates and total amount of oil discharged from the property due to equipment failure is estimated to be near zero.

The largest oil inventories at the Paducah Site are associated with the C-601-B fuel oil tank and the switchyards. The C-601-B tank is located within secondary containment and the unused C-601-A tank is available to offload the inventory in the event of equipment failure. The switchyard tanks do not have secondary containment, but any spills, if not cleaned up at the tank location, would flow into facility drainage systems that are equipped with engineered, oil diversion/retention structures.

The drainage at the Paducah Site most likely to be impacted by an oil release would flow to Outfalls 001, 002, 008, 009, 010, 011, 012, and 015. Oil check inverted pipe dams have been installed in ditches leading to these outfalls to reduce the potential for discharges of the oil or oil products discussed above to enter Bayou Creek or Little Bayou Creek via outfall drainage ditches. Outfalls 019 and 020 include sufficient holdup capacities to allow removal of visible oil sheens prior to discharge. Appendix A indicates the most likely drainage ditch that such discharges would enter. Flow rates of a discharge would vary according to the size and location of the discharge and the weather conditions at the time. Remaining

Outfalls 004, 006, 016, and 017 drain areas are not reasonably expected to receive spills from oils or oil products. Outfalls are inspected daily for evidence of oil and maintained in accordance with CP4-UT-0405, *Utilities Routine Duties, Checks, and Inspections.*

2.8 SECONDARY CONTAINMENT—40 *CFR* § 112.7(c)

Oil storage tanks at Paducah Site are provided with secondary containment dikes that are constructed to be impervious to the materials stored or have dual-wall construction to provide secondary containment. Typically, the dikes are concrete and painted or otherwise sealed. Descriptions of the secondary containment for the tanks are provided in Section 2.4.1. Secondary containment areas located outside are designed to hold at least 110% of the largest tank in the containment area. This will allow enough containment capacity for both expected rainfall and the entire contents of the tank. Secondary containment areas located inside the buildings are designed to hold 100% of the largest tank in the containment area.

For equipment or other containers without engineered secondary containment, such as areas where tanks are filled by vendor tanker trucks, best practices are used to limit the potential for release. Spill prevention techniques will be employed during all filling activities to include continuous visual attention to fill efforts, use of drip pad or pans under valves and connections, and final checks for leaks prior to the tanker exiting the site. Similarly, drip pad or pans, buckets, or other sorbent materials are staged at accessible locations to support oil transfers and other activities with potential to release oil.

The two 1,000-gal tanks at C-333 and C-337 are of double-wall construction with leak detection monitors for the interstitial space.

The 1,000-gal and 500-gal tanks located outside at C-746-U are manufactured by ConVault® and are UL® listed. Each system consists of a primary steel tank and secondary containment that consists of a 30-mil (0.78-millimeters)-thick polyethylene membrane that encloses the steel tank and insulation material. The primary steel tank and the secondary containment are encased in 6 inches of reinforced concrete, but no steel or insulating material comes in contact with the concrete. The tanks located at C-746-U are provided with a UL®-listed spill containment system that includes a normally closed valve to release any spilled product from refilling into the primary steel tank. During refilling, all equipment will be grounded properly. These tanks are equipped with standard pumps for refueling vehicles and other equipment. Personnel are required by procedure to use portable containment pans below the filling point each time the vehicle or equipment is refueled. The C-746-U area, including where the diesel and gasoline tanks are located, drains to a man-made containment lagoon. Runoff of precipitation is accumulated in the sediment basin and manually discharged directly to Outfall 019 when it gets near full and KPDES permit conditions can be met. The accumulated water will be examined before discharge to Outfall 019 to ensure that no oil will be discharged.

The two 4,000-gal steel tanks at C-752-B are UL®-listed, double wall, and staged on a bermed, concrete pad. These two tanks are split internally into 1,000 and 3,000 gal sections. The second wall of the tanks is sufficiently impervious to contain oil per 40 *CFR* § 112.7(c)(1)(i) requirement for secondary containment. Additional containment is provided by the bermed, concrete pad [40 *CFR* § 112.7 (c)(1)(iii)] and absorbent materials [40 *CFR* § 112.7(c)(1)(viii)] are available as a backup/defense in depth. Precipitation accumulated on the pad will be examined prior to manual discharge to ensure no oily products are discharged. Appropriate and nonexpended absorbent devices will be used as needed to ensure that only clean water is discharged. A spill collection pad along with spill collection devices (pans, pads, etc.) also may be used at the dispensing pumps to help ensure that oily products do not impact the environment if a spill occurs.

While not considered bulk storage tanks, electrical transformers, circuit breakers, and other electrical devices located in the four switchyards at the Paducah Site are listed in Appendix A. This equipment is located outdoors and does not have secondary containment due to electrical hazards associated with accumulated water in switchyards. Areas such as tanker truck loading/unloading areas and piping associated with switchyard equipment also do not have secondary containment dikes. These tanker truck loading/unloading areas and switchyards do, however, flow into facility drainage systems that are equipped with engineered, oil diversion/retention structures. Underflow dams designed to permit the passage of water but contain floating materials, such as oil, have been constructed in the Paducah Site drainage ditches with the potential to receive an oil discharge. The dams are designed to provide effective oil containment and were installed on ditches to 8 of the 15 outfalls at the Paducah Site, specifically Outfalls 001, 002, 008, 009, 010, 011, 012, and 015, to contain the oil on facility property and prevent it from reaching Bayou or Little Bayou Creeks.

Hazardous Waste Management Facility Permit KY8-890-008-982 applies storage capacity restrictions to the three permitted waste storage facilities at C-733, C-746-Q, and C-752-A. All three facilities have secondary containment and are permitted to store waste oils. The C-733 facility is a partially enclosed facility that has a maximum container storage capacity of 38,500 gal and can store all hazardous waste as listed in the permit. The C-746-Q facility maximum waste storage capacity is 306,570 gal; C-746-Q can store all wastes listed in the permit, except for Hazardous Waste Code D001. No ignitable wastes can be stored at C-746-Q. The C-752-A facility has a maximum container storage capacity of 496,000 gal. All waste streams can be stored at C-752-A, except for flammable wastes with a flash point $< 100^{O}$F. Ignitable wastes may be stored at C-752-A with a flashpoint between 100^{O}F and 140^{O}F. The permitted storage facilities' capacities are counted as capacity because they are permitted to store waste oils.

A 250-gal AST at C-540 is used to hold kerosene. The tank is carbon steel and located in bermed secondary containment. A 150-gal tank at C-755-Y that contains used oil is located within secondary containment.

Two 250-gal ASTs are located at C-746-A and were used to hold gasoline and diesel. The tanks are located within bermed secondary containment. These tanks have not been used since approximately 2001.

All of the process building lube oil drain tanks are diked. The lube oil systems are located within the process buildings and have been drained and air-gapped. The process buildings no longer are operational with no path to future operations available due to the deactivation that has taken place to date.

A lube oil skid system for the purge and evacuation pumps has been installed in C-335 and C-337. Each lube oil skid system has a capacity of 300 gal. They are located inside the process buildings.

Heavy equipment may be staged between projects at C-745-C in the center of the Paducah Site. This storage yard drains to Outfall 001, which is protected with an underflow dam. Equipment staged for long periods will be drained of oil/oil products to the extent practical prior to placing in storage.

Heavy equipment may be stored in the C-740 yard that drains to Outfall 008. Heavy equipment also may be staged at C-750 and C-755. The C-755 storage area is located on the east side of the plant and drains to Outfalls 002 and 010. The C-750 storage area is located in the center of the plant and drains to Outfall 008. These Outfalls are equipped with oil containment dams. Spilled materials from these areas will be contained and collected upstream from the oil containment dams.

Other tanks and equipment on-site that typically contain 55 gal (or greater) of oil products include mobile equipment/vehicles and temporarily located equipment (e.g., generators). In addition, fuel tanker trucks periodically come on-site to refill tanks and equipment. These mobile and temporary items range over a

wide on-site area or are not at one location for a substantial period of time. When practical, temporary secondary containment is put into place to support temporary storage of equipment. Transfer of fuel and fueling of mobile vehicles/equipment is performed over drip pads/pans to the extent practical.

Major drainage ditches are equipped with inverted pipe dams designed to permit the passage of water, but contain floating material, such as oil. The dams are designed to provide effective oil containment in the event of a discharge. Furthermore, should a discharge reach a drainage ditch, inflatable pipe stoppers are available to fit any of the culverts in these ditches.

2.9 IMPRACTICABILITY OF SECONDARY CONTAINMENT—40 *CFR* § 112.7(d)

Electrical transformers, circuit breakers, and other electrical devices located in the switchyards at the Paducah Site are listed in Appendix A with the specific capacity of each of these equipment types. This equipment is located outdoors and does not have engineered secondary containment due to electrical hazards associated with accumulated water in switchyards. Sorbent materials are available at the tank locations to address spills. Inspections in accordance with CP4-UT-0105, *Routine Station Checks and Maintenance C-531, C-533, C-535, C-537*, generally are conducted on day-shift work days. Leaks, drips, or other releases are noted, reported, and appropriately addressed. Repairs are conducted as required.

Secondary containment for mobile and temporary equipment, such as trackhoes and generators, usually is not practical or considered necessary. These items are designed and maintained to minimize discharges and inspected regularly. Where appropriate and practical, portable containment pans will be placed below the filling point each time the equipment is filled or emptied. For example, large trucks are refueled in accordance with applicable procedures that require the use of portable containment pans.

Additional information on conformance with the requirements of this subsection is provided in the FRP.

2.10 INSPECTIONS, TESTS, AND RECORDS—40 *CFR* § 112.7(e)

All equipment, containers, tanks, piping, and secondary containment with a capacity of 55 gal or more of oil or oil products are inspected/tested on a regular basis in accordance with this SPCC Plan and applicable procedures. The methods and frequency of inspections/testing are appropriate for the item as discussed below. Each inspection report will be signed by the qualified employee performing the inspection. Each Paducah Site contractor maintains procedures and work controls that provide for content, type, and recording of inspection/testing activities. Inspection reports, maintenance records, and other pertinent records are maintained in accordance with the Records Management Program.

2.10.1 Stationary Tanks and Containers

ASTs and portable containers are inspected and tested in accordance with applicable API 653 and/or Steel Tank Institute (STI) SP001 Standards as indicated in Table 1. Those tanks and containers that have been drained and removed from service are considered to be at a significantly reduced risk of discharge. This includes the Process Building Lube Oil Tanks and some of the diesel fuel tanks. Refer to Appendix A for a detailed list of those items that have been drained.

The following requirements apply to the inspection of nonmobile tanks, as applicable.

- Visual inspection of tank and tank site, signage, fire extinguisher and bollards; rusted areas will be cleaned and painted.

Table 1. Inspection of Stationary Tanks and Containers

Tanks	Capacity (gal)	Inspections and Frequencies per API 653 and STI SP001
AST with Secondary Containment C-601-A/C-601-B Fuel Oil and Emergency Storage	420,000	Monthly and Annual Visual; 5-year external visual inspection; 20-year internal visual inspection
AST with Secondary Containment C-540/C-541 Transformer and OCB Oil	7,500 to 15,000	Monthly and Annual Visual; 20-year visual/external ultrasonic inspection
AST with Secondary Containment Process Building Lube Oil (Drained)	270 to 13,600	Monthly Visual
C-333-A/C-337-A/C-360 Hydraulic Oil	125 to 200	Monthly and Annual Visual
Dual-wall/Located within Secondary Containment Gasoline/Diesel/Kerosene	150 to 3,000	Monthly and Annual Visual
Gasoline/Diesel/Kerosene (Drained)	250 to 500	Monthly Visual
Drums/Totes	$\geq$ 55	Monthly Visual

- Visual inspection of secondary containment, tank pad, and foundation for erosion, corrosion, cracking, and settling.
- Visual inspection of grout exterior (top, sides) for abrasion, cracking, holes, and excess wear.
- Visual inspection of venting systems, vent caps, level indicators, gauges, pumping systems, including hose and nozzle, and fill spouts.
- Insert dip stick into leak detection tube and record presence of liquids and hydrocarbon odor.
- Record inspections on an inspection form and file in the office of the tank owner or designee.
- Any findings related to safety and as-designed operations will be repaired promptly using the designated work release program, as necessary.
- Repair records will be filed as part of work control documents or project file.

2.10.2 Portable Tanks and 55-Gal Drums

Portable tanks, such as transfer tanks secured in the beds of trucks, are inspected each time they are used. Heavy equipment associated with the C-746-U Landfill is inspected in accordance with CP4-WM-0619, *C-746-U Landfill Industrial Equipment Inspection and Maintenance.*

Mobile or portable bulk storage containers (e.g., 55-gal drums and totes) are inspected per STI SP001.

2.10.3 Mobile or Temporary Equipment

Mobile or temporary equipment, such as trackhoes or generators, are inspected prior to use and each time they are refueled for leaks/drips in accordance with site procedures (e.g., CP3-SM-0054, *Mobile Construction Equipment*). Heavy duty equipment, such as loaders and cranes, are inspected for leaks during use. Equipment staged for long periods will be drained of oil/oil products to the extent practical

prior to placing in storage. Equipment will be maintained properly in accordance with applicable site procedures or manufacturing specifications to limit potential for release of oil or oil products.

2.11 PERSONNEL, TRAINING, AND DISCHARGE PREVENTION—40 *CFR* § 112.7(f)(1)-(3)

All Paducah Site personnel receive annual General Employee Training (referred to as "GET") which includes an overview of the SPCC including spill prevention and reporting. Paducah Site personnel handling oil and oil products or who assist in the transfer of such products to or from bulk storage containers will be trained appropriately. In addition, a responsible person will be designated for each tank, container, and equipment item containing oil or oil products and having capacities of 55 gal or greater. These persons have additional training consistent with their role. At a minimum, training consists of proper operation and maintenance of equipment to prevent discharges, discharge procedure protocols, applicable regulations and procedures, descriptions of recent known discharges, and the contents of this SPCC Plan. Oil handling personnel receive refresher briefings at least once per calendar year by completing an annual on-line Oil Discharge Prevention Briefing.

Personnel assigned to the ERO are required to complete an initial training program satisfactorily prior to assignment. The initial ERO training program is composed of a collection of functional modules which emergency personnel receive based on their emergency assignment. This training program, includes classroom-type training (lectures, seminars), practical applications (tabletop drills, functional drills, and exercises), and self-study programs, has been developed for the ERO and support personnel. The training program ensures the continued emergency management response competency of all persons who may respond/participate during an emergency (CP3-EP-1016, *Emergency Management Training*). Annual refresher training is performed typically in conjunction with an annual drill or exercise. Additionally, any emergency response personnel will be trained according to Paducah Site procedures. This training will incorporate proper spill prevention and reporting training to ensure that personnel have adequate knowledge of this SPCC Plan.

The Paducah Site ERO receives training commensurate with assigned positions. These training requirements ensure the continued emergency management training of all persons who may respond/participate during a plant emergency. Specialized emergency management training is provided and includes, but is not limited to, the following categories of topics.

- **On-Scene Response Activities.** Topics covered include incident command, firefighting, HAZMAT response, including monitoring and emergency medical technician training.

- **Emergency Management Orientation.** Topics covered include concept of operations, emergency organizations, responsibilities and authorities, requirements, facilities and equipment overview, and off-site interface summary including public information.

- **Incident Classification and Notification.** Topics covered include classification systems, notification requirements, procedures, and emergency actions levels.

- **Hazard/Consequence Assessments and Protective Actions.** Topics covered include the spectrum of hazards and possible emergencies (man-made, natural, and security), reference material, site profile information, and site dispersion models. On- and off-site protective actions, protective action decision-making philosophy, and recovery decision making will be covered.

- **Ongoing Incident Assessment.** Topics covered include on-site incident monitoring, off-site field monitoring, personnel protection, and reporting.

Specific emergency training requirements for each position is described in an Emergency Plan Implementing Procedure, which includes frequency of retraining and the number of hours of initial and retraining that are provided to the ERO.

Emergency responders to oil or hazardous material spills performing mitigation tasks will be trained to the Hazardous Materials Technician level in accordance with the requirements of 29 *CFR* § 1910.120(q). Refresher training is provided annually to maintain qualifications.

The Regulatory Compliance Manager has the primary responsibility to prevent discharges of oil and oil products. The Regulatory Compliance group reviews work control documents and procedures to identify the potential for discharge and appropriate control measures.

The potential for spills/discharges is identified and analyzed during work planning with spill prevention hazard controls identified to prevent discharges to the environment. The resulting work planning documents are used by project managers and frontline supervisors to cover hazards and control measures each morning for the work to be accomplished that day.

2.12 FACILITY SECURITY—40 *CFR* § 112.7(g)

The mission of PGDP necessitates stringent safeguards and security requirements. The fact that the facility is a secured area assures that responsible personnel are always physically present at the site in the event of any incident. Protective Force personnel make regular rounds and would observe unusual incidents such as releases of oil or chemicals and would be aware of any explosions or fires that might have on- or off-site environmental impacts. Regular rounds also are made inside and outside buildings by operators.

Because the plant is a security area, the site is fenced and the public is excluded. This exclusion reduces the possibility of accidental or malicious incidents due to public interactions with the environmentally significant materials present on the plant site. Tanks, containers, and equipment containing oil and oil products and having capacities of 55-gal or greater will be located within the Paducah Site security fence or in fully fenced or locked areas with controlled access. Also, associated valves and pumps will be secured and locked in closed or off positions when they are not operational or on standby status. Vehicles/equipment may be locked to secure unauthorized access. In addition, adequate lighting will be provided for stationary equipment to allow for the discovery of discharges during hours of darkness and for the prevention of discharges occurring through acts of vandalism. Transfer/loading areas are locked to prevent access by unauthorized personnel. Delivery/vendor personnel, if involved, will be escorted by facility personnel during loading/unloading operations. Administrative controls and procedures/protocols dictate equipment operation to minimize the potential for inadvertent releases.

PGDP is a controlled access facility with fencing, gates, and numerous other features that contribute to the safety and security of the facility. Security at PGDP is maintained 24 hours a day by a staff of trained Protective Force personnel. All Protective Force personnel are equipped with two-way radios and have direct communications with PGDP protection personnel. Protective Force personnel control the entry of vehicles and equipment into the Limited Area. Visitors and contractors entering PGDP must process through the security offices before being allowed entry into the Limited Area.

The majority of the plant site is surrounded by an 8-ft high, security fence; all access gates to the Limited Area are locked or manned by Protective Force personnel. All gates and locks are checked routinely around the clock by Protective Force personnel. These and other measures minimize the likelihood of entry of unauthorized personnel.

2.13 LOADING/UNLOADING RACKS—40 *CFR* § 112.7(h)

Major bulk storage tanks on-site generally are filled via a 6,000-gal tanker truck from a local vendor, including the C-601-B 420,000-gal fuel tank; the transformer oil and OCB tanks at the C-531, C-533, C-535, and C-537 Switchyards; and the gasoline ASTs at C-333 and C-337. The loading areas for these tanks are not diked. Site procedures control loading activities, including safety precautions such as the following:

- Use of drip pans or buckets
- Use of chocks on the tanker truck during loading
- Continuous site personnel monitoring of the loading operations
- Valve guides
- Traffic control during loading operations
- Leak inspections of valves, connections, and ground surface during and after loading

Operational tasks associated with unloading fuel oil from tanker trucks and supplying oil to the C-600 boilers are documented in CP4-UT-0501, *No. 2 Fuel Oil Handling and Storage.*

2.14 BRITTLE FRACTURE EVALUATION—40 *CFR* § 112.7(i)

The C-601-A and C-601-B fuel oil storage tanks are the only field constructed ASTs on-site. Should the fuel oil storage tanks undergo a repair, modification, or change in service that might affect the risk of discharge or failure, a brittle fracture evaluation will be performed according to appropriate standards.

2.15 CONFORMANCE WITH OTHER REQUIREMENTS—40 *CFR* § 112.7(j)

Section 311 of the Federal Water Pollution Control Act of 1973, as amended by the CWA, expressly prohibits the discharge (i.e., spill or release) of oils or hazardous substances that may affect the natural resources of the United States. It then charges the EPA to promulgate regulations that (1) determine the quantity of oils or of any hazardous substance that, if discharged, may be harmful to the public health and welfare; and (2) determine the conditions or circumstances under which oils or hazardous substances may be discharged. EPA, in response to this section, issued 40 *CFR*, Chapters 110, 112, 116, and 117. Kentucky's requirements are contained in 401 *KAR* 05 and *KRS* 224.01-400.

40 *CFR* § 110 prohibits the discharge of oil in harmful quantities, which are those that violate applicable water quality standards; cause a film or sheen on the surface of the water; or cause a sludge or emulsion to be deposited beneath the water surface or on the shoreline. Any releases of oil under 40 *CFR* § 110 are reported to the Natural Response Center and the Kentucky Department for Environmental Protection (KDEP). 40 *CFR* § 112 requires that an SPCC Plan be generated for any facility that has discharged or could reasonably be expected to discharge oil in harmful quantities. This SPCC Plan meets the requirements of 40 *CFR* § 112 and analogous Kentucky requirements.

The FRP for PGDP is written to comply with federal regulations outlined in the CWA, Section 311 (j)(5), as amended by the Oil Pollution Act, Section 4202 (a)(6). The regulation requires that owners/operators of certain non-transportation-related facilities, currently subject to the SPCC requirements of 40 *CFR* § 112, develop an FRP. Facilities that, because of their location and petroleum storage capacity, could cause "substantial harm" to the environment by discharging oil into or on the navigable water or adjoining shorelines must submit a FRP. The FRP shall be reviewed and evaluated at least once every five years or as deemed necessary. Updates and revisions shall be made with the change of facility

information, emergency response action plan, and release vulnerability. The PGDP FRP was updated during 2017.

Notification requirements are implemented through procedures and KPDES permit requirements. 40 *CFR* § 125 and 401 *KAR* 05 require that persons who hold National Pollutant Discharge Elimination System/KPDES permits incorporate Best Management Practices (BMPs) into their operations. BMPs, including spill control, are outlined in PAD-REG-1006, *Best Management Practices Plan*. BMPs are used to protect against the discharge of toxic and hazardous pollutants.

CERCLA Section 101(14) calls for a list of those materials already designated as hazardous or extremely hazardous under any one of five statutes. These hazardous or extremely hazardous substances and their reportable quantities (RQ) are designated in 40 *CFR* § 302.4, Table 302.4; 40 *CFR* § 117; 302; and 355. Additional substances can be added to the list by the EPA administrator under Section 102 of CERCLA. Releases of these substances in quantities exceeding their RQ must be reported to the National Response Center and KDEP if the RQ is exceeded. If the release also has the potential to go off-site, the release must be reported to the McCracken County and Ballard County Disaster Emergency Services. Kentucky Statute, *KRS* 224.01-400, in addition to releases of materials if the abovementioned RQs are exceeded, also sets RQs for petroleum products (gasoline, oil) that are specifically excluded from the CERCLA lists.

In addition to the plans mentioned above, FPDP procedure CP3-ES-0003, *Environmental Incident Reporting*, provides site direction for reporting spills or discharges. The PSS in concert with Regulatory Compliance makes event notifications to appropriate agencies/parties including EPA, DOE/DOE Contractors, Kentucky, etc., as required by regulation/policy in accordance with this procedure.

2.16 QUALIFIED OIL-FILLED OPERATIONAL EQUIPMENT—40 *CFR* § 112.7(k)

Electrical transformers and circuit breakers located in the four switchyards at PGDP meet the 40 *CFR* § 112.2 definition of qualified oil-filled operational equipment. This equipment is located outdoors and does not have secondary containment due to electrical hazards associated with accumulated water in switchyards. These areas do, however, flow into facility drainage systems that are equipped with engineered, oil diversion/retention structures. Underflow dams designed to permit the passage of water but contain floating materials such as oil have been constructed in the plant drainage ditches with the potential to receive an oil discharge. The dams are designed to provide effective oil containment and were installed as a pre-emptive response action to contain the oil on-site. This switchyard equipment is inspected daily (per shift) for leaks, spills, and other operational issues. Containment dikes are inspected daily, drained as required, and checked for valve closure. Daily inspections are conducted in accordance with CP4-UT-0105, *Routine Station Checks and Maintenance C-531, C-533, C-535, C-537*. Transfer of oil from oil storage tanks to equipment is controlled by CP4-SM-0072, *Oil House C-540-A and C-541-A Oil Filter Press*.

3. ON-SHORE NONPRODUCTION FACILITIES—40 *CFR* § 112.8(a)

3.1 FACILITY DRAINAGE—40 *CFR* § 112.8(b)

The Paducah Site is located approximately 3.5 miles south of the Ohio River in a generally rural area of McCracken County, Kentucky. The WKWMA completely surrounds the facility. There are two tributaries of the Ohio River running through WKWMA, Bayou Creek on the west and Little Bayou Creek on the east. These two streams join north of the site and discharge to the Ohio River. These creeks exhibit widely fluctuating discharge characteristics that are tied closely to local precipitation. Natural runoff makes up a small portion of the flow in Bayou and Little Bayou Creeks during the dry periods and was supplemented largely by continuous water discharge from the Paducah facility. Surface runoff from the facility drains through 1 of 11 permitted outfalls directly to one of the tributaries. Because the facilities discharge flow directly into WKWMA, the distance to a fish and wildlife and sensitive environment essentially is zero from the facility outfalls.

These creeks are not used as drinking water supplies, but are accessible to wildlife and recreationists. Both creeks are classified by the Commonwealth of Kentucky as being for "all uses" and, therefore, are subject to warm water aquatic habitat criteria standards in the creeks and drinking water standards at the nearest drinking water withdrawal location (Cairo, IL).

In general, plant drainage is divided into east and west systems with some overlap. A site drainage diagram is provided in Appendix C. Liquid discharges (including potentially released oil and oil products) would be expected to flow to the major drainage ditches and potentially to Bayou Creek or Little Bayou Creek. The flow rate would vary according to the size and location of the discharge and the weather conditions at the time.

3.1.1 Drainage from Diked Storage Areas—40 *CFR* § 112.8(b)(1) & (2)

Outdoor dikes are designed to contain 110% of the largest tank or container contents, and also will contain the maximum expected rainfall in addition to the container or tank contents. All dikes are equipped with manual drain valves that remain closed unless rainwater is being discharged following the determination that no material has been spilled within the containment area in accordance with plant procedures.

The facility manager of any area with secondary containment is responsible for inspecting and maintaining dikes in accordance with procedures. Appendix B contains examples of checklists that personnel use to inspect diked areas located at C-600 and at C-200. These examples document methods used for secondary containment inspections.

3.1.2 Drainage from Undiked Storage Areas—40 *CFR* § 112.8(b)(3)

Areas such as tanker truck loading/unloading areas, oil-filled equipment, and piping associated with storage tanks or oil filled equipment also do not have secondary containment dikes. These areas, in additional to the plant switchyards, do however flow into facility drainage systems that are equipped with engineered, oil diversion/retention structures. Underflow dams designed to permit the passage of water, but contain floating materials such as oil, have been constructed in PGDP drainage ditches with the potential to receive a medium or worst case oil discharge. Each outfall that has the potential to receive an oil discharge has an oil containment underflow dam installed to prevent the flow of oil to the flume and contain the oil on-site prior to reaching Bayou or Little Bayou Creeks.

Historically, the C-600 Steam Plant was the source of oil sheen in the Paducah Site effluent ditch leading to KPDES Outfall 008. The oil sheen was skimmed above the inverted pipe dam. An oil control area has been established at C-600, and a belt skimmer was installed. If any oil escapes the control area, it will be trapped downstream in the oil control structures established for the outfall.

The skimmer at Outfall 008 underflow dam consists of a dam, quiet zone, and weir. Adjacent to the dam is an oil containment pond. The dam creates a quiet zone with a three-hour retention time to allow oil and other buoyant materials to separate from the water. A skirted oil boom diverts floating materials to a slightly submerged float-controlled weir. Most of the ditch flow will underflow the floating boom and then overflow the dam. Diverted materials will flow to the containment pond and remain there for remediation. An underflow dam maintains the water level in the containment area.

Should an oil or chemical spill reach a drainage ditch, inflatable pipe stoppers are available to fit any of the culverts in these ditches. Spill containment can be provided within the perimeter fence, if necessary. Booms and absorbent pads can be used in the event a spill reached the creeks.

3.1.3 Drainage Diversion Systems—40 *CFR* § 112.8(b)(4)

The facility drainage system is equipped such that, in the event of an uncontrolled discharge, oil will be retained on facility property. Underflow dams designed to permit the passage of water, but that contain floating materials such as oil, have been constructed in the plant drainage ditches with the potential to receive a medium or worst case oil discharge. The dams are designed to provide effective oil containment and were installed as a preemptive response action for potential future spills to contain the oil prior to reaching Bayou Creek or Little Bayou Creek.

3.1.4 Facility Drainage Water Treatment—40 *CFR* § 112.8(b)(5)

Facility drainage waters are not treated continuously at the site prior to discharge.

3.2 BULK STORAGE CONTAINERS—40 *CFR* § 112.8(c)

Per 40 *CFR* § 112.2, bulk storage container means any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container. Bulk storage containers are identified in Table A. Bulk storage containers will meet 40 *CFR* § 112.7 requirements outlined in Section 2.0 of this SPCC Plan and the following additional requirements.

3.2.1 Container Compatibility—40 *CFR* § 112.8(c)(1)

Bulk storage containers utilized at the site are constructed of steel, plastic, or another suitable material and are compatible with the materials being stored and storage conditions. Quality Control is responsible for inspecting the integrity of all the corrosive liquid storage tanks located on the plant site in accordance with plant procedures. Corrosive liquid storage tanks are any tanks which contain substances that can cause destruction of living tissue by chemical action. This includes oil storage tanks. A list of oil storage tanks and respective inspection criteria/scheduling is maintained by the Work Planning and Scheduling Group. Prior to any new containers being used or constructed on-site for bulk oil/oil product storage, the responsible project coordinates with Engineering and Regulatory Compliance to evaluate container compatibility and to ensure inclusion on the oil inventory as well as the identification of inspection/testing requirements.

3.2.2 Secondary Containment for Bulk Storage Containers—40 *CFR* § 112.8(c)(2)

Oil storage tanks at the site are provided with secondary containment. Secondary containment dikes are constructed to be impervious to the materials stored. Typically, the dikes are concrete and painted or otherwise sealed. In some cases, secondary containment is provided by dual-wall construction, which may be augmented by containment dikes. The in-service fuel oil storage tank at C-600 has an earthen dike lined with a synthetic material impervious to oil. Secondary containment areas located outside of buildings or facilities will hold at least 110% of the largest tank in the containment area. This will allow enough containment capacity for both expected rainfall and the entire contents of the tank. Secondary containment areas located inside the buildings will hold 100% of the largest tank in the containment area.

3.2.3 Valve Closure and Drainage—40 *CFR* §§ 112.8(c)(3)

All dikes are equipped with manual drain valves that remain closed unless rainwater is being discharged. Prior to discharge, a determination that no material has been spilled within the containment area is required in accordance with site procedures. Valve closure status is an element of periodic inspections identified in site procedures and is captured on inspection logs. Personnel conduct visual inspections of diked areas before draining as described in CP4-UT-0405, *Utilities Routine Duties Checks and Inspections*. Appendix B contains an example of checklists personnel use to inspect the diked area located at C-200 and C-600. These examples document methods used for secondary containment inspections. Records of these inspections are maintained in accordance with the Records Management Program.

3.2.4 Corrosion Protection of Buried/Partially Buried Storage Metallic Tanks—40 *CFR* § 112.8(c)(4) & (5)

The Paducah Site currently does not have any buried or partially buried metallic oil storage tanks in service.

3.2.5 Integrity Testing of Aboveground Containers—40 *CFR* § 112.8(c)(6)

Aboveground containers undergo inspection on a regular schedule and whenever material repairs are made. All aboveground tanks, with the exception of the C-601-A and C-601-B Fuel Oil Storage tanks, meet the following standards:

- Elevated or double-wall, such that the bottom of the primary tank is not in contact with the ground and can be visually inspected.
- Secondary containment or double-wall tank provides release prevention barrier of material sufficiently impervious to stored material.
- Leaks can be detected visually by operators.

All in-service tanks included in Appendix A are inspected periodically by operations personnel in accordance with site procedures. These inspections are documented on roundsheets or checklists, examples of which are included in Appendix B. For a list of AST inspection and testing criteria, refer to Table 1.

Integrity testing of the C-601-A and C-601-B Fuel Oil Storage Tanks is performed by a qualified contractor in accordance with requirements outlined in API-653. External and internal ultrasonic inspection is conducted by API/STI certified inspectors.

3.2.6 Internal Heating Coils—40 *CFR* § 112.8(c)(7)

The site has no bulk storage containers with internal heating coils.

3.2.7 Liquid Level Sensing—40 *CFR* § 112.8(c)(8)

The fuel storage locations at the C-600 facility are equipped with spill detection alarms and automatic shut-off devices. Originally, the oil supply line from the fuel oil storage tank to the C-600 boiler system was equipped with a flow alarm that would detect abnormal flow in the event of a leak. A remote shut-off valve was installed in the supply line. With replacement of the old boilers with the five package boilers, the configuration of the tank has been changed. Now the C-601-B tank is used to charge a 500-gal tank that connects to the two package boilers that can use fuel oil. Filling of the 500-gal tank from the C-601-B tank is conducted in accordance with site procedures and is monitored continuously by site personnel during the process.

The fuel dispensing station at C-752-B has spill detection alarms and automatic shut-off devices.

The ASTs at C-333 and C-337 are of double-wall construction with leak detection monitors for the interstitial space.

Other smaller containers are monitored directly by personnel during transfer operations using gauges, sight glasses, or other visual measurements. Liquid levels are included in periodic inspections and documented on inspection logs, which are maintained in accordance with the Records Management Program.

Discovery of alarms or a spill will be reported immediately to the PSS. The PSS will respond to the scene and determine if a spill actually has occurred, and, if so, the required level of response needed. Alarm response and spill response are addressed in site procedures.

3.2.8 Effluent Treatment Facilities—40 *CFR* § 112.8(c)(9)

The Paducah site has no effluent treatment facilities dedicated solely to treating drainage from storage areas.

3.2.9 Leakage Response—40 *CFR* § 112.8(c)(10)

Facility managers are responsible to inspect and drain dikes. If any visible discharge or leak has occurred, the material must be reported, removed, and properly dispositioned in accordance with site procedures. If necessary, repairs to storage container or associated equipment will be initiated immediately.

3.2.10 Mobile or Portable Storage Containers—40 *CFR* § 112.8(c)(11)

Product containers such as drums are stored in areas with secondary containment, typically, a portable system such as a drum pan. A 750-gal, portable oil tank trailer utilized in maintenance of electrical switchyard equipment typically is stored at one of the switchyard oil houses. As mentioned previously, no secondary containment is provided in these areas. The switchyards flow into facility drainage systems that are equipped with engineered, oil diversion/retention structures. Underflow dams designed to permit the passage of water, but contain floating materials such as oil have been constructed in the plant drainage ditches with the potential to receive a medium or worst case oil discharge. The dams are designed to provide effective oil containment and were installed as a preemptive response action for potential future spill to contain the oil on-site.

3.3 FACILITY TRANSFER OPERATIONS—40 *CFR* § 112.8(d)

3.3.1 Buried Piping at Transfer Operations—40 *CFR* § 112.8(d)(1)

The Paducah Site does not operate any buried piping associated with oil transfer operations.

3.3.2 Terminal Connections at Transfer Operations—40 *CFR* § 112.8(d)(2)

The primary oil transfer operations are associated with filling the C-601-B fuel oil storage tank and operation of electrical switchyard equipment. The terminal connections for piping systems associated with these systems are capped or plugged with appropriate fittings to prevent leakage in the event a valve fails or is not sealed properly.

3.3.3 Pipe Supports at Transfer Operations—40 *CFR* § 112.8(d)(3)

Support structures for aboveground oil transfer piping are engineered in accordance with established specifications to prevent abrasion and corrosion. Typically, these supports consist of painted metal structures anchored to concrete footings. The piping is attached to the supports using "U"-type bolts or piping hangers that will allow for proper expansion and contraction of the piping. Supports are inspected during periodic tank and pipe inspections and documented on inspection logs.

3.3.4 Inspections for Transfer Operations—40 *CFR* § 112.8(d)(4)

The piping systems associated with the facility transfer operations primarily related to switchyard equipment maintenance are inspected for leaks during use in accordance with site procedures.

3.3.5 Posting for Aboveground Piping—40 *CFR* § 112.8(d)(5)

Aboveground piping is used primarily for oil transfers in the electrical switchyards areas. The majority of this system is located so that vehicle traffic is not an issue. Access to the areas where it does cross roadways typically is restricted to authorized individuals only. Delivery and/or vendor vehicles, if allowed in the area, would be escorted by facility personnel.

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APPENDIX A

TANK EVALUATION

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TABLES

FIGURES

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Table A.1. Aboveground Storage Tanks Gasoline, Kerosene, E-85, or Diesel

Tank No.[1]	Area No.	Location	Maximum Capacity (gal)	Substance Stored	Secondary Containment Capacity (gal)	Drainage Ditch
A1	1	C-333[3]	250 (not in use)	Gasoline	900	009
A1a	1	C-333	1,000	Gasoline	1,100[2]	009
A2	2	C-337[3]	250 (not in use)	Gasoline	1,080	001
A2a	2	C-337	1,000	Gasoline	1,100[2]	001
A4	3	C-724	250	Gasoline	2,180	008
A5	4	C-746-A[3]	250 (not in use)	Gasoline	1,120	001
A6	4	C-746-A[3]	250 (not in use)	Gasoline	1,120	001
A7	5	C-750[3]	5,500 (not in use)	Gasoline	11,150	009
A8	6	C-540	250	Kerosene	600	011
N/A	7	C-752-B	3,000	Gasoline	7,400	009
N/A	7	C-752-B	1,000	E-85	7,400	009
N/A	7	C-752-B	3,000	Biodiesel	7,400	009
N/A	7	C-752-B	1,000	Diesel	7,400	009
N/A	8	C-746-U	1,000[2]	Diesel	N/A	019
N/A	8	C-746-U[3]	500[2] (not in use)	Gasoline	N/A	019

[1] All tanks are diked and are carbon steel.
[2] This tank is double-wall with interstitial leak detection.
[3] Tanks have been drained.

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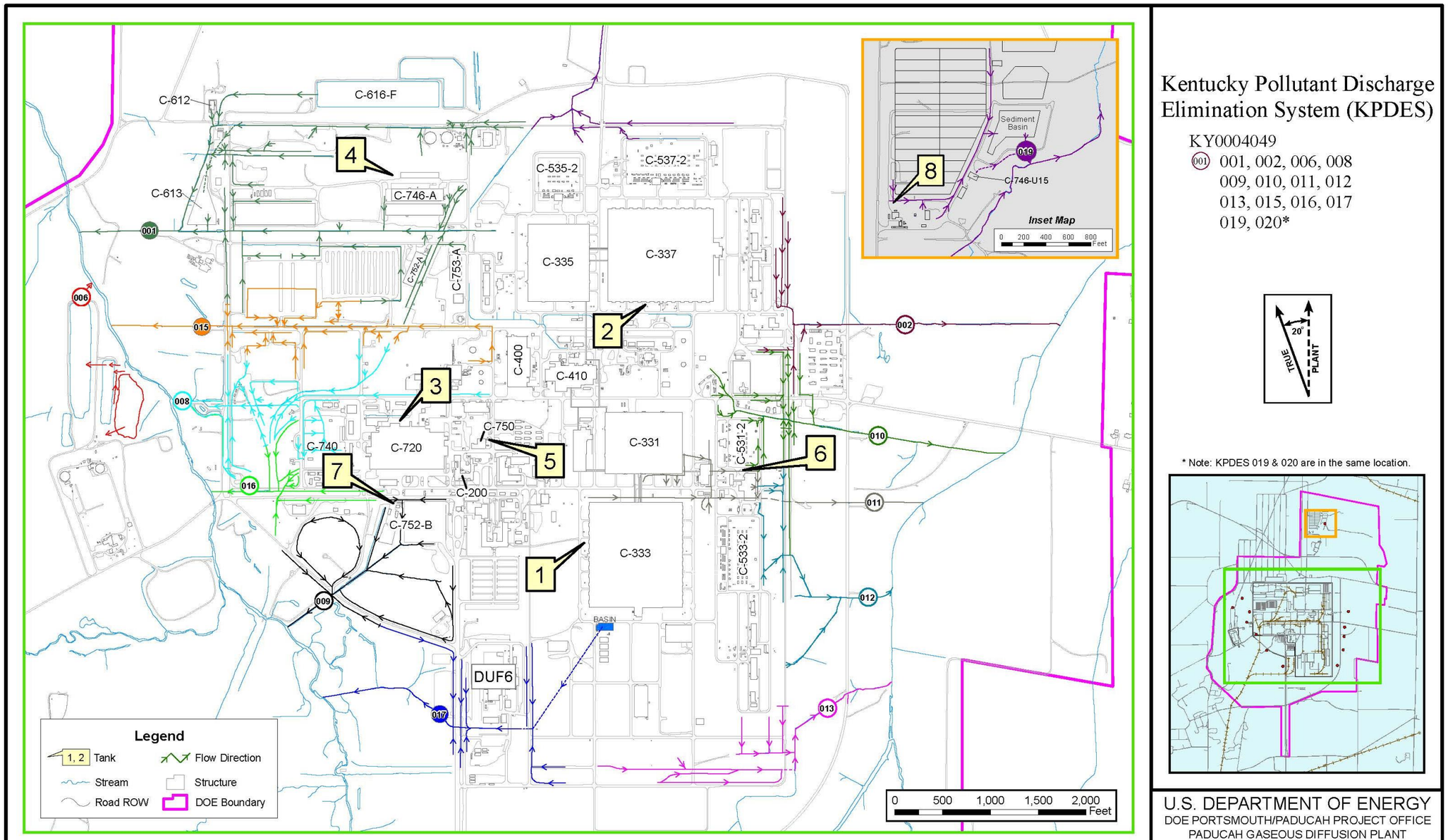
Location of tanks for Areas 1–8 listed on page A-5 are shown on Figure A.1.



Kentucky Pollutant Discharge Elimination System (KPDES)

KY0004049

001 001, 002, 006, 008
009, 010, 011, 012
013, 015, 016, 017
019, 020*

* Note: KPDES 019 & 020 are in the same location.

U.S. DEPARTMENT OF ENERGY
DOE PORTSMOUTH/PADUCAH PROJECT OFFICE
PADUCAH GASEOUS DIFFUSION PLANT

FLUOR

Figure A.1. Aboveground Storage Tanks Gasoline, Kerosene, E-85 or Diesel

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

Figure No. Aboveground_Storage_Tanks_GKED.mxd
Date: 10-09-2017

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Table A.2. Aboveground Storage Tanks Diesel

Tank No.[1]	Area No.	Location	Maximum Capacity (gal)	Secondary Containment Capacity (gal)	Drainage Ditch
A9	1	C-200	550	1,050	009
A10	2	C-310[2]	250 (not in use)	540	009
A11	3	C-331[2]	250 (not in use)	530	009
A12	4	C-331[2]	250 (not in use)	530	009
A13	5	C-333[2]	250 (not in use)	660	009
A14	6	C-333[2]	250 (not in use)	660	009
A15	7	C-333[2]	250 (not in use)	660	009
A16	8	C-333[2]	250 (not in use)	900	009
A17	9	C-335[2]	250 (not in use)	1,200	001
A18	10	C-335[2]	250 (not in use)	1,200	001
A19	11	C-337[2]	250 (not in use)	660	001
A20	12	C-337[2]	250 (not in use)	660	002
A21	13	C-337[2]	250 (not in use)	660	002
A22	14	C-337[2]	250 (not in use)	1,080	001
A23	15	C-607[2]	550 (not in use)	750	008
A24	16	C-611	1,500	2,090	006
A26	17	C-631[2]	250 (not in use)	660	008
A27	18	C-724[2]	500 (not in use)	2,180	008
N/A	19	C-600	500	N/A	008
N/A	20	C-631-3[2]	300 (not in use)	N/A	008

[1] All tanks are diked and carbon steel.
[2] Tanks have been drained.

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Location of tanks for Areas 1–20 listed on page A-9 are shown on Figure A.2.

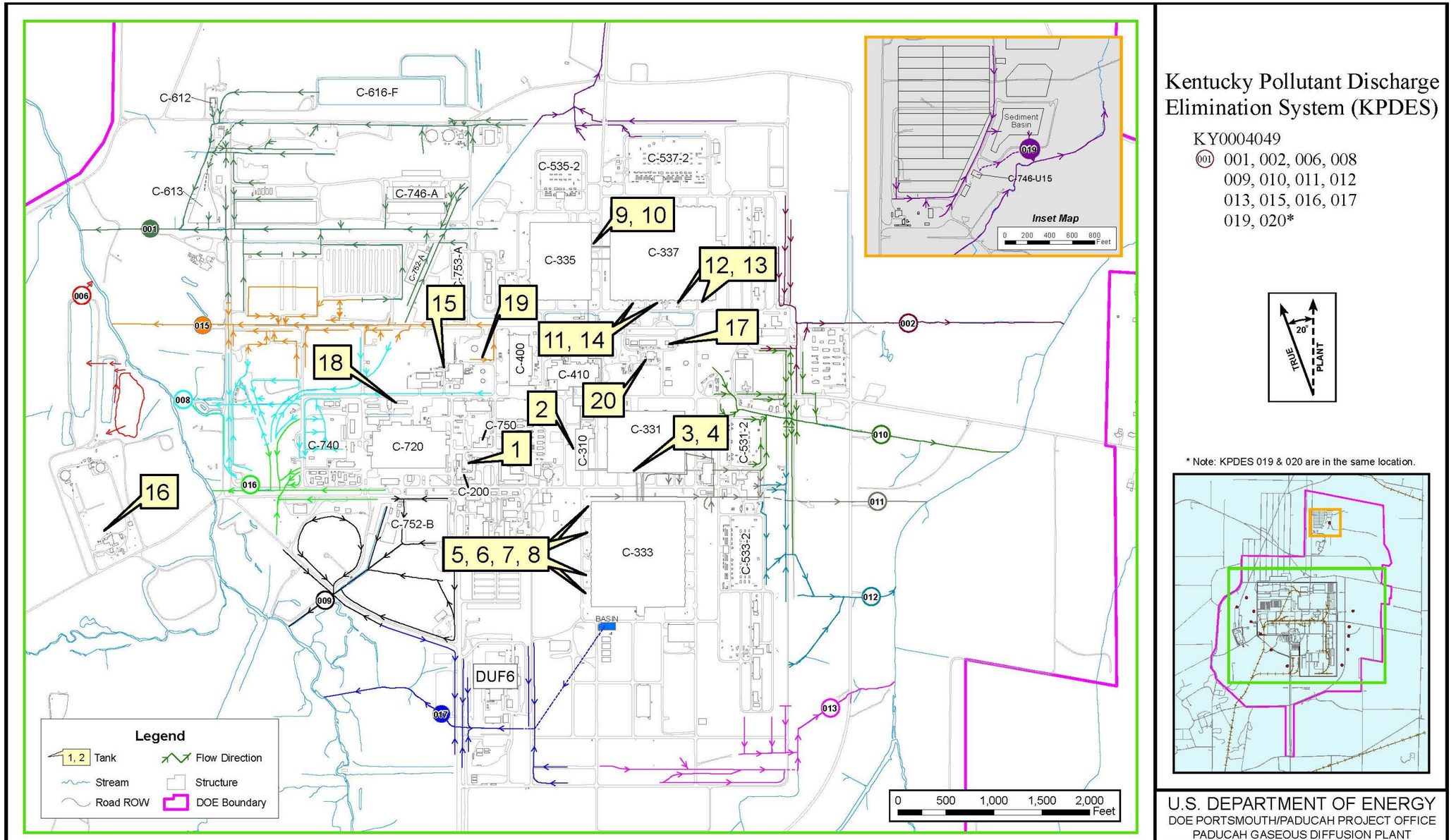

Figure A.2. Aboveground Storage Tanks Diesel

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

Figure No. Aboveground_Storage_Tanks_Diesel.mxd
Date: 10-09-2017

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Table A.3. Aboveground Storage Tanks Oil

Tank No.[1]	Area No.	Location	Maximum Capacity (gal)	Substance Stored	Secondary Containment Capacity (gal)	Drainage Ditch
A28	1	C-601-A	420,000	Emergency Storage	675,000	008
A29	2	C-601-B	420,000	Fuel oil	675,000	008
A33	3	C-540 (NW)	15,000	Transformer oil	38,000	011
A34	4	C-540 (SW)	15,000	Transformer oil	38,000	011
A35	5	C-540 (NE)	7,500	OCB oil	11,400	011
A36	6	C-540 (SE)	7,500	OCB oil	11,400	011
A37	7	C-541 (SE)	15,000	Transformer oil	38,000	001
A38	8	C-541 (SW)	15,000	Transformer oil	38,000	001
A39	9	C-541 (NE)	7,500	OCB oil	11,400	001
A40	10	C-541 (NW)	7,500	OCB oil	11,400	001

[1] All tanks are diked and carbon steel.

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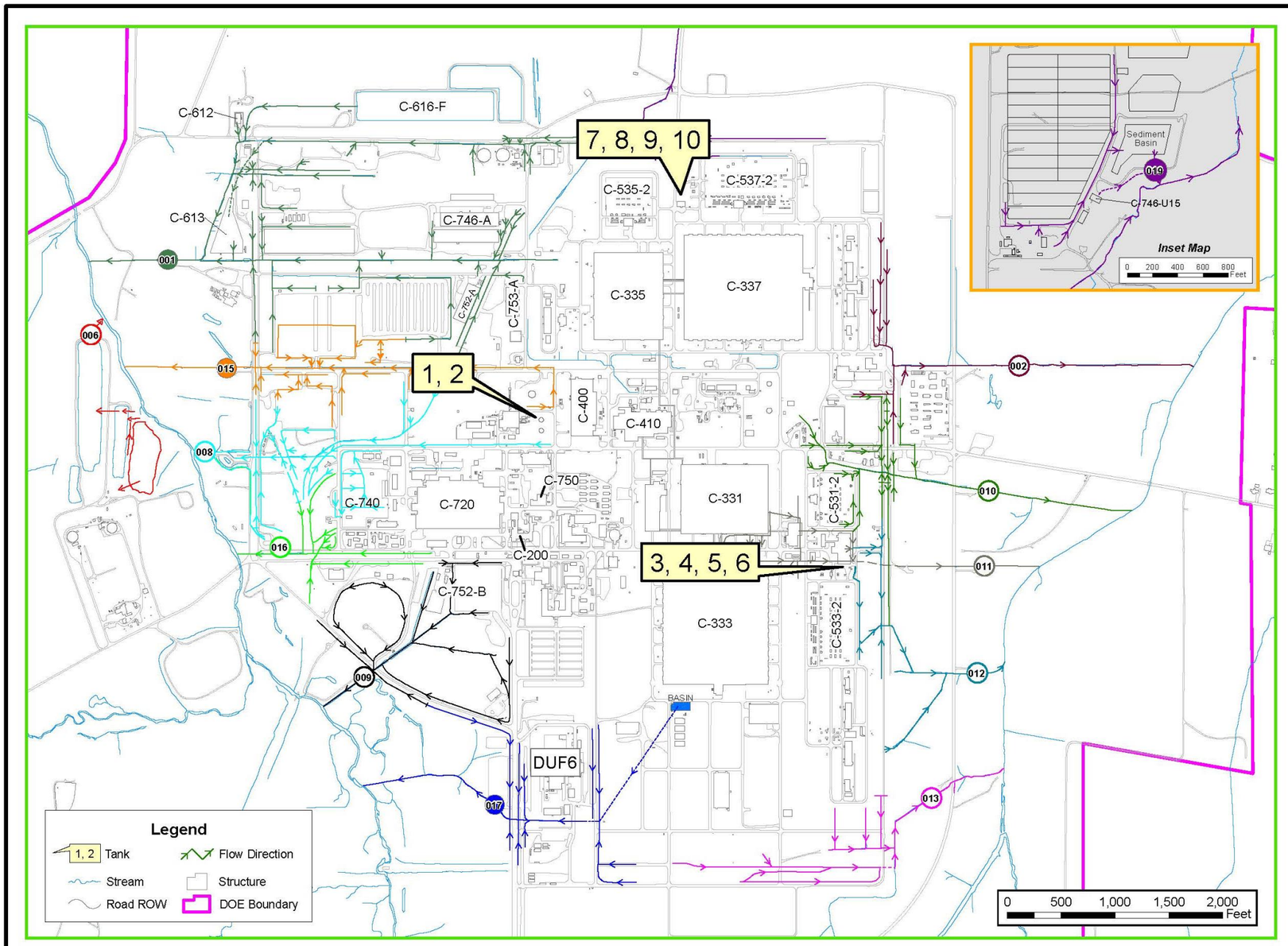
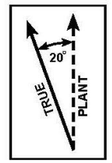
Location of tanks for Areas 1–10 listed on page A-13 are shown on Figure A.3.



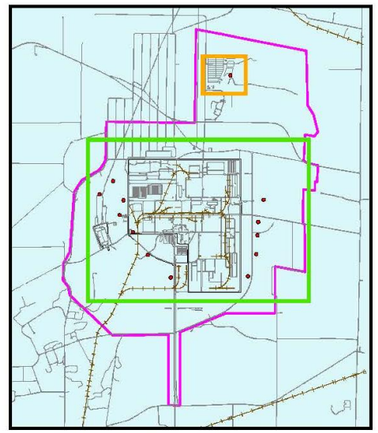
Kentucky Pollutant Discharge Elimination System (KPDES)

KY0004049

001, 002, 006, 008
009, 010, 011, 012
013, 015, 016, 017
019, 020*



* Note: KPDES 019 & 020 are in the same location.



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FLUOR

Figure A.3. Aboveground Storage Tanks Oil

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

Figure No. Aboveground Storage Tanks Oil.mxd
Date: 10-09-2017

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Table A.4. Aboveground Storage Tanks Lube Oil

Tank No.[1,2]	Area No.	Location and Quantity	Function	Maximum Capacity[3] (gal)	Secondary Containment Capacity[4] (gal)	Drainage Ditch
A41	1	C-310-A (1)[5]	Supply	265	N/A	008
A42	2	C-310 (1)	Drain	14,700	16,159	008
A43	2	C-310 (1)	Supply	9,320	N/A	008
A44	3	C-315 (1)	Drain	380	636	011
A45	3	C-315 (1)	Supply	330	449	011
A46-49	4	C-331 (4)	Drain	13,600 (each)	25,248	008, 009, 010, 011
A50-53	4	C-331 (4)	Supply	7,200 (each)	N/A	008, 009, 010, 011
A54-65	5	C-333 (12)	Drain	10,100 (each)	30,298	009, 011, 012
A66-71	5	C-333 (6)	Supply	13,000 (each)	N/A	009, 011, 012
A72-75	6	C-335 (4)	Drain	13,600 (each)	25,248	001
A76-79	6	C-335 (4)	Supply	7,200 (each)	N/A	001
A80-91	7	C-337 (12)	Drain	10,100 (each)	30,298	001, 002
A92-97	7	C-337 (6)	Supply	13,000 (each)	N/A	001, 002

[1] All tanks are carbon steel.
[2] Tanks were installed in 1952.
[3] Lube oil tanks have been drained and removed from service.
[4] All drain tanks are diked with level alarms. All supply tanks are diked by the building.
[5] C-310-A lube oil tank was drained; flowable fill was added to tank and piping trench.

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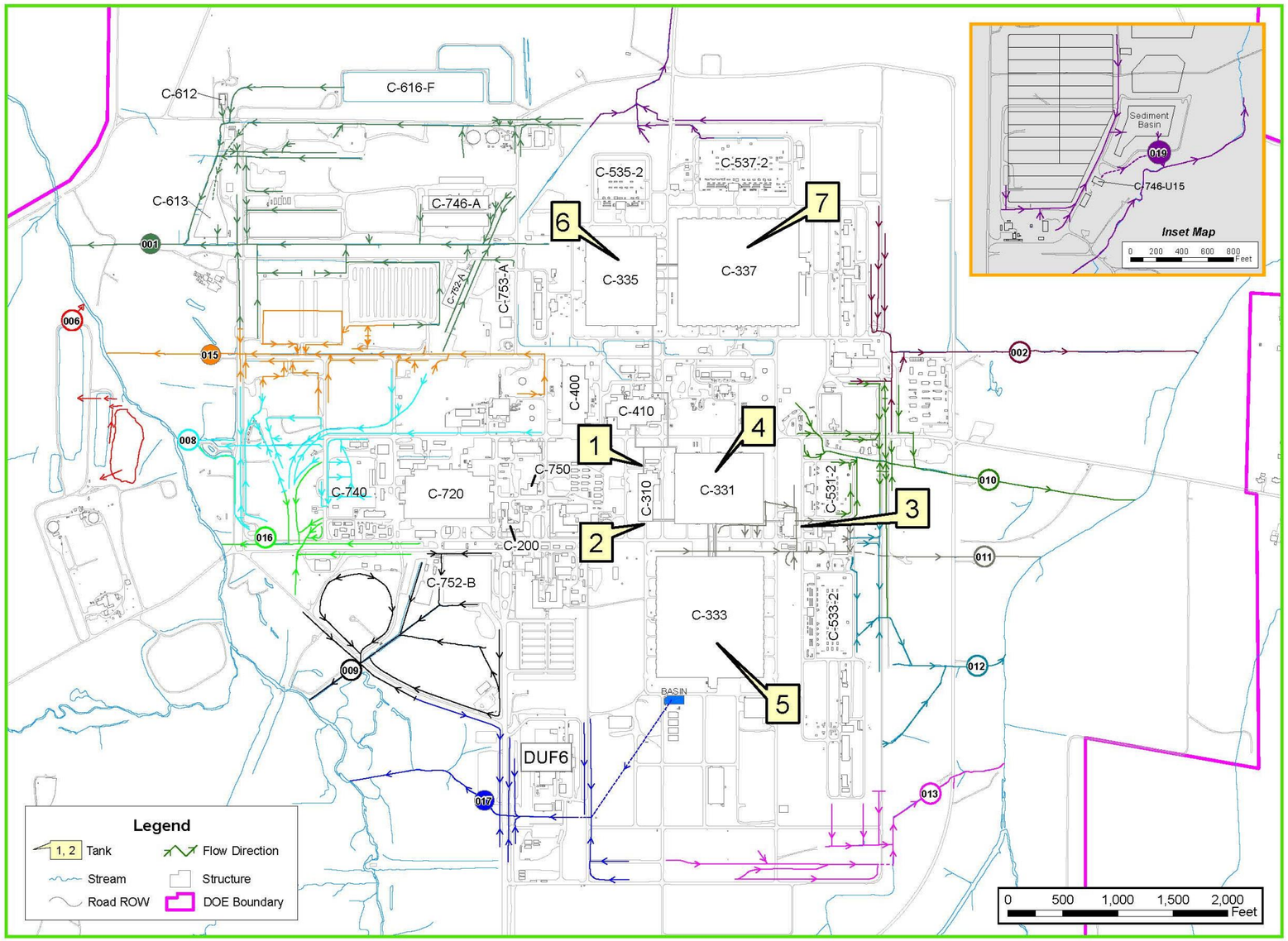
Location of tanks for Areas 1–7 listed on page A-17 are shown on Figure A.4.



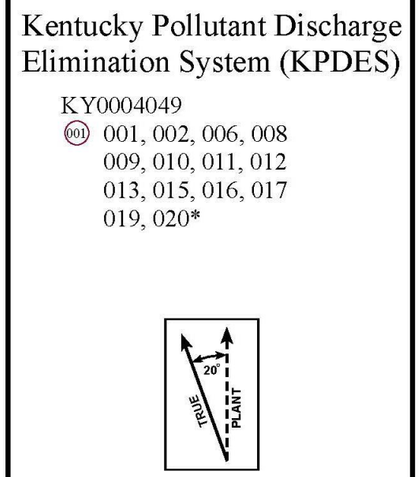


Figure A.4. Aboveground Storage Tanks Lube Oil

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

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Table A.5. Hazardous Waste Facilities

Area No.	Location	Designation	Permitted Storage Capacity (gal)	Drainage Ditch
1	C-733	Hazardous Waste Storage Area	38,500 gal	008
2	C-746-Q	Hazardous and Mixed Waste Storage Area	306,570 gal	012
3	C-752-A	Hazardous and Mixed Waste Storage Area	496,000 gal	015, 001

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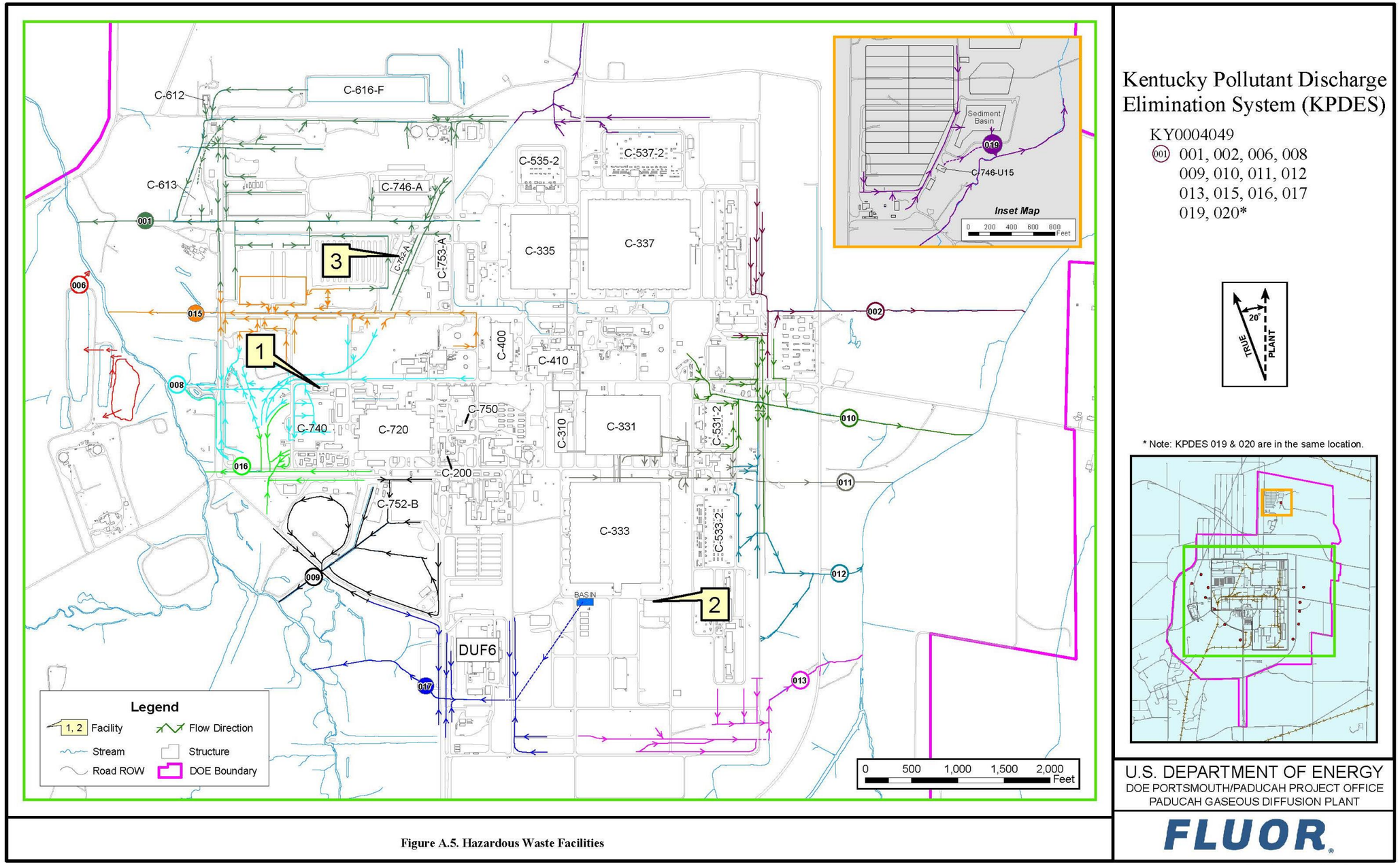
Location of hazardous waste facilities for Areas 1–3 listed on page A-21 are shown on Figure A.5.



Kentucky Pollutant Discharge Elimination System (KPDES)

KY0004049

001 001, 002, 006, 008
009, 010, 011, 012
013, 015, 016, 017
019, 020*

* Note: KPDES 019 & 020 are in the same location.

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Figure A.5. Hazardous Waste Facilities

Figure No. Hazardous Waste Facilities.mxd
Date: 10-09-2017

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

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Table A.6. Oil-Filled Electrical Equipment Located in the Switchyards

Area No.	Quantity	Location	Maximum Capacity Per Tank (gal)*	Substance Stored	Equipment Type	Drainage Ditch
1	6	C-531	345	Oil	Potential transformer	010
	8		15,000		Power transformer	
	5		400		Grounding transformer	
	42		1,320		OCBs	
	2		14,310		Reactors	
	5		300		Neutral reactor	
2	12	C-533	800	Oil	Potential transformer	012
	12		15,000		Power transformer	
	12		400		Grounding transformer	
	105		1,835		OCBs	
	1		17,650		Reactor	
	12		300		Neutral reactor	
3	6	C-535	345	Oil	Potential transformer	001
	5		15,000		Power transformer	
	5		400		Grounding transformer	
	16		1,320		OCBs	
	5		300		Neutral reactor	
4	12	C-537	345	Oil	Potential transformer	001
	13		15,000		Power transformer	
	13		400		Grounding transformer	
	35		1,320		OCBs	
	3		21,481		Reactor	
	13		300		Neutral reactor	

*Maximum capacities are based on the largest tank located within each piece of equipment.

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Location of oil-filled electrical equipment for Areas 1–4 listed on page A-25 are shown on Figure A.6.

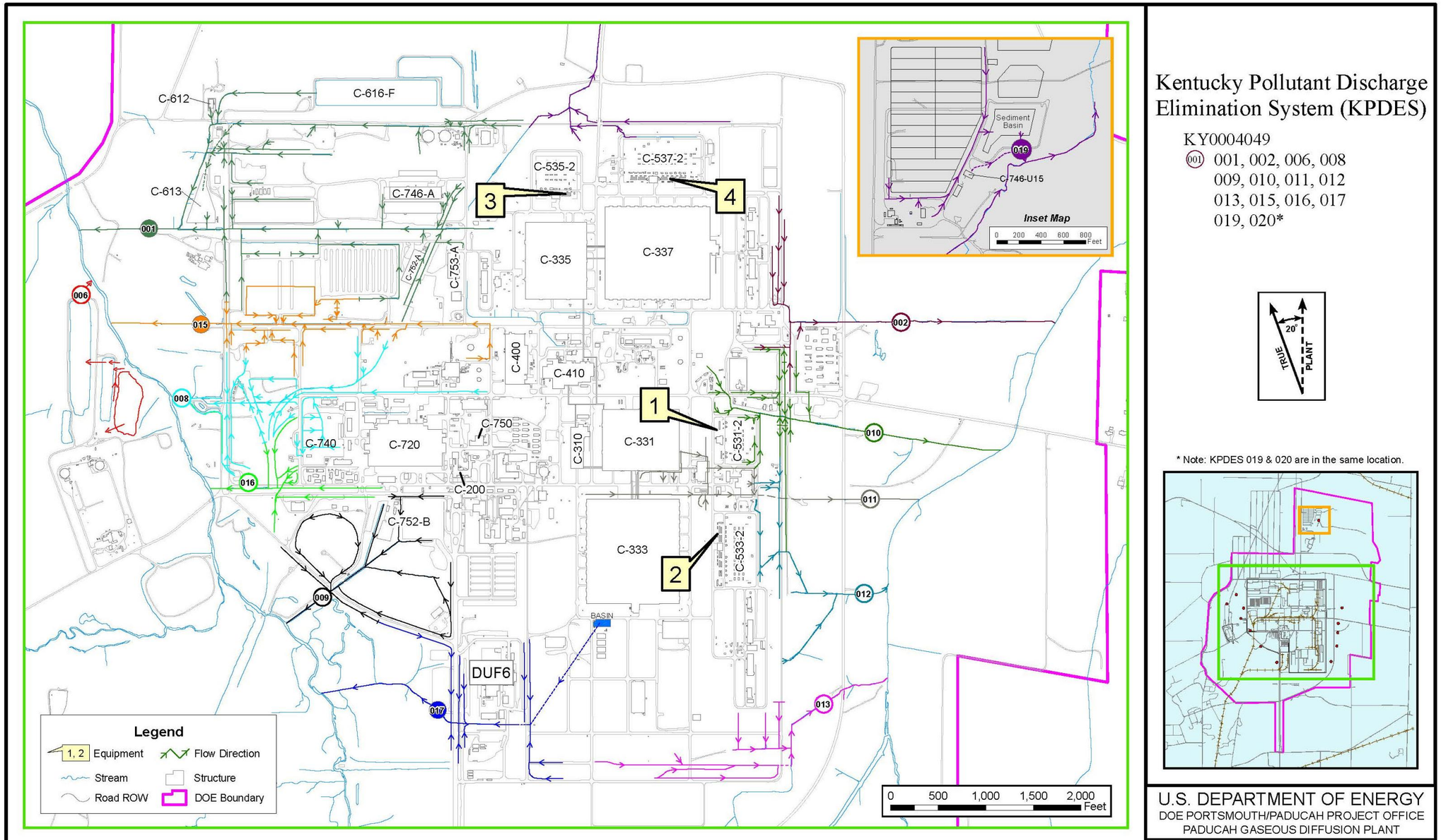

Figure A.6. Oil-Filled Electrical Equipment Located in the Switchyards

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

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Table A.7. Miscellaneous Oil Containing Equipment and Containers

Area No.	Facility	Designation	Total Capacity	Drainage Ditch
1	C-333-A	Hydraulic Oil Tank	125 gal	009, 011, 012
2	C-335	Lube Oil Skid	300 gal	001
3	C-337	Lube Oil Skid	300 gal	001
3	C-337	31A Oil Totes (Quantity is 68)	23,800 gal	001
3	C-337	Drained PCB Transformers (Quantity is 67)[1]	105,000 gal	001
4	C-337-A	Hydraulic Oil Tank	125 gal	001
5	C-360	Hydraulic Oil Tank	200 gal	002, 010
6	C-750	Used Oil	330 gal	009
7	C-755-Y	Used Oil	150 gal	002
8	C-100	Diesel Generators (Quantity is 2)	616 gal	009
9	C-415	Diesel Generator	100 gal	010
10	C-611	#7 Pump	450 gal	006
11	C-611-U	Diesel Generator	450 gal	006
12	C-740-B	55-gal oil drums (Quantity is 82)	4,510 gal	008, 009
13	C-802	Diesel Generator	200 gal	009, 017

[1]PCB transformers have been drained.

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Location of miscellaneous oil containing equipment and containers for Areas 1–13 listed on page A-29 are shown on Figure A.7

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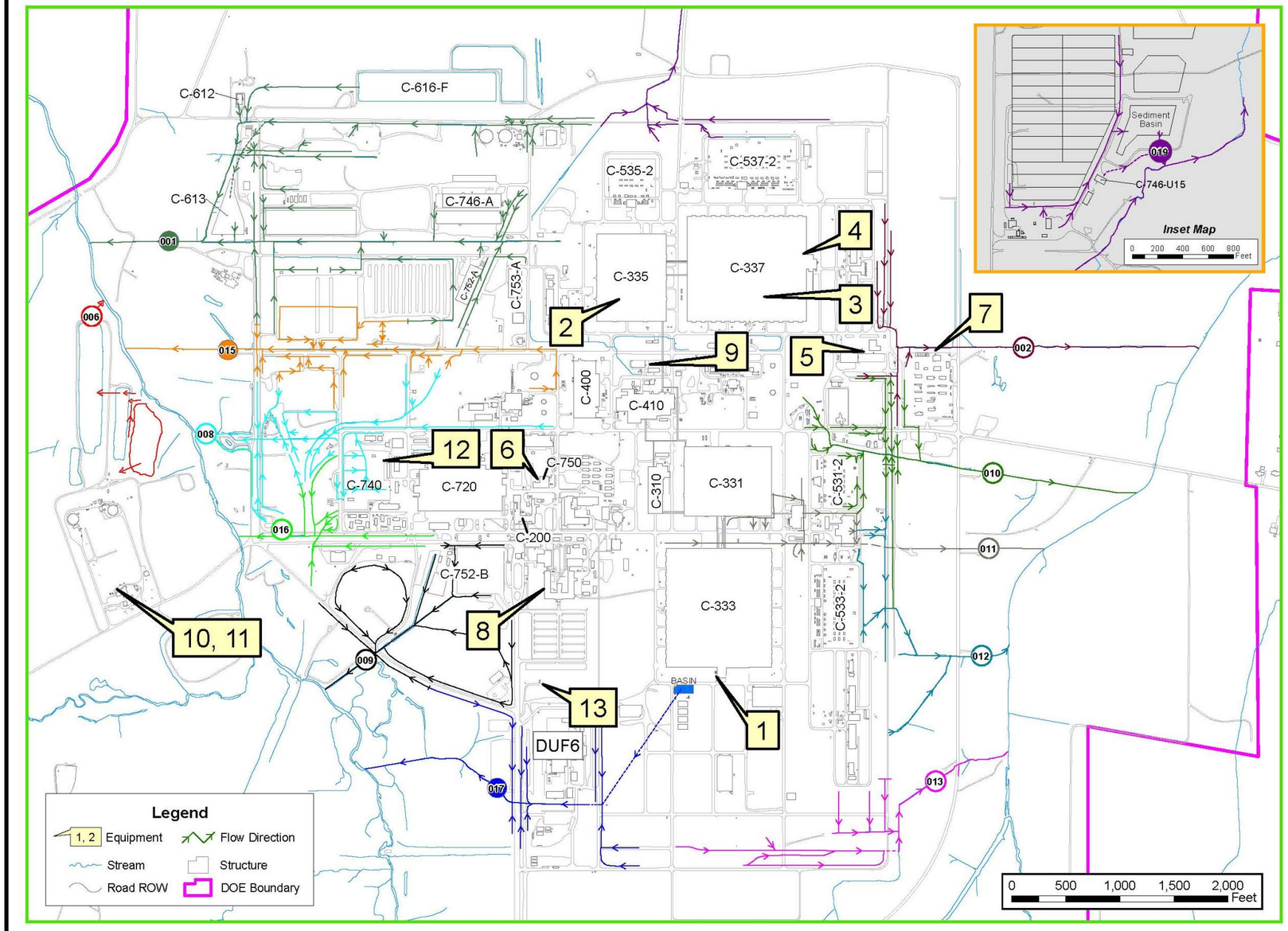

Kentucky Pollutant Discharge Elimination System (KPDES)

KY0004049

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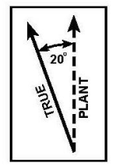
009, 010, 011, 012
013, 015, 016, 017
019, 020*



* Note: KPDES 019 & 020 are in the same location.

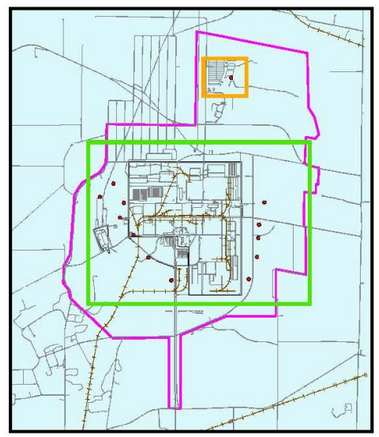


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Figure No. Misc_Oil_Containing_Equipment.mxd
Date: 10-09-2017

Figure A.7. Miscellaneous Oil Containing Equipment and Containers

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

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APPENDIX B

EXAMPLES OF INSPECTION CHECKLISTS

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CP4-OP-1124-F04 - Facility Operations Monthly Emergency Equipment Inspection

Month:_____ Year:_____

SUPPLIES	MINIMUM REQUIRED	MINIMUM AVAILABLE	
		YES	NO
Sandbags	50		
Absorbent Media	50 bags, 40 lbs each, or equivalent		
Absorbent Rolls	2 rolls, approximately 38" X 100 ft each, or equivalent		
Absorbent Pillows	24, approximately 15" x 15"		
Absorbent Pads	200, approximately 16" x 20"		
Oil Booms – 8" by 10'	20		
Oil Booms – 5" by 10'	12		
Face Shields	8		
Splash Suits	4		
Tyvek Coveralls	20		
Gloves	20 pair		
Booties	20 pair		
EQUIPMENT	**MINIMUM REQUIRED (IN WORKING CONDITION)**	**MINIMUM AVAILABLE**	
		YES	**NO**
Oil Skimmer			
2" Pump	1		
4" Pump	1		

Comments:_____

_____

_____

_____

_____

_____

_____

_____

Inspected by:_____Badge Number:_____Date: _____

FLM Review:_____Badge Number:_____Date: _____

CP4-OP-1124-F04 R0

CP4-OP-1124-F01 – Chemical Operations Operator Rounds and Equipment Status Sheet

Date:	Time:

LOCATION		OK
C-400 BUILDING [Including breakrooms/changehouses/process areas/basement, etc. (minimum of 1 exhaust fan must be operating at least one hour prior to entering the basement)]		
Water Leaks		
Air Leaks		
Lighting		
Exhaust fans running [basement (minimum of 1 exhaust fan must be operating at one hour prior to entering the basement.)]		
Energized 480 Volt heater cord connections checked <110ºF. (Note heater locations where connections are >110ºF in Remarks section and notify FLM.)		
C-400 CAAS AIR BOOSTER COMPRESSOR		
Check air pressure on PI-136. **If** pressure ≥ 158.0 psig and compressor is running, **then** notify FLM.		
*Oil is at top of circle within bull's eye when compressor is shut down		
CAAS Compressor hour meter reading		
C-409 BUILDING (Including breakrooms/change houses/process areas, etc.)		
Water leaks		
Air leaks		
***Lighting		
C-409 CAAS AIR BOOSTER COMPRESSOR		
Check air pressure on PI-136. **If** pressure ≥ 158.0 psig and compressor is running, **then** notify FLM.		
*Oil is at top of circle within bull's eye when compressor is shut down		
CAAS Compressor hour meter reading		
C-410-D /C-410-K		
No evidence of fluorine leakage in area or equipment		
C-410-K alarm check performed		
C-410-D CAAS AIR BOOSTER COMPRESSOR		
Check air pressure on PI-136. **If** pressure ≥ 158.0 psig and compressor is running, **then** notify FLM.		
*Oil is at top of circle within bull's eye when compressor is shut down		
CAAS Compressor hour meter reading		
C-410-D AND C-410-K FLUORINE AREAS		
PRESSURES	Tank A (Max. 148 psia Min. 16 psia)	
	Tank B (Max. 148 psia Min. 16 psia)	
	Tank C (Max. 148 psia Min. 16 psia)	
	Header (Max. 22.7 psia Min. 15 psia)	
No evidence of leakage from tube truck		
C-742-B ClF_3 Cylinder Storage Yard		
No combustible waste or excessive vegetation within 10 feet of cylinders		
Cylinder labels, barricades and postings are free from damage and are legible		
C-745-A-1 F_2 Tube Truck		
No evidence of leakage from tube truck		
No evidence of damage to tubing or valves		
Truck labels and posting are free from damage and legible		

CP4-OP-1124-F01 – Chemical Operations Operator Rounds and Equipment Status Sheet

LOCATION	OK
C-410 L SPILL RESPONSE AREA	
Sliding door is sealed with TID and locked	

Comments: _____

_____

_____

_____

_____

Operator signature: _____ Badge # _____ Date _____

FLM signature: _____ Badge # _____ Date _____

* **If** oil below circle inside bull's eye, **then** add oil according to CP3-OP-0301. **If** above inside bull's eye, **then** notify FLM.
** Not required when truck is in winter storage.
*** Excludes lighting above C-409 Uranium Recovery Area

CP-23411 WEEKLY CHECKLIST

DATE:_____

CHEMICAL		PART NUMBER	CURRENT INVENTORY	MINIMUM AMOUNT	REORDER
Chemical Name	**Size**				
Hardness Indicator Powder	3 oz btl	460-S0277		>1 btl	
Hardness Buffer Solution	Qrts btl	42453		> 2 qrts	
Hardness Titrating solution	Qrts btl	460-S0274		> 1 qrt	
Water Conditioning Salt	40 # bag	N/A		> 5 bags	
Distilled Water	GAL	N/A		N/A	
Molyver 1	25 ml pk/100	1414669		1	
Molyver 2	25 ml pk/100	1414869		1	
Molyver 3	25 ml pk/100	1415869		1	
NALCO 3DT231	55 GAL drum			>.5	
STABREX ST70	55 GAL drum			>.5	
TRASAR 2	QT	460-S0920.74		>1	
TRASAR 3	QT	460-S0980.74		>1	
NEXGUARD 22350	55 GAL drum			>2	
NALCO 750 Anti-foam	55 GAL drum			>1	
Ultrion 8186	275 GAL tote			2	
Molybdate	55 GAL drum	1419301		1	
Remarks:					
Operator:					
FLM:					

CP-23411 WEEKLY CHECKLIST

DATE: _____

AREA	TYPE OF OIL	Stores Number	Estimated Amount	Minimum Amount	Reorder
C-600	BG Shell 68			30 gal.	
	ISO 32, #158 (Sump & motor bearing oil for all Centac's)				
C-620	A1000C Synthetic Lubricating Oil			55 gal.	
	Schaeffer # 112 Micron Moly HTC Machine Oil SAE 30 ISO-100			55 gal.	
	Molykote 44 grease			1 tube	
C-335	Lectrodryer Sealant	D8[illegible]666-0[illegible]		2 sticks	
	ISO 32, #158 (Sump & motor bearing oil for all Ce[illegible]'s)				

C-335 CENTAC HOUR METER READINGS	
#1 CENTAC	
#2 CENTAC	
#3 CENTAC	

REMARKS:

CP-23411 WEEKLY CHECKLIST

DATE: _____

Inspect/drain C-601 fuel oil storage tanks containment dike according to CP4-UT-0405	√	
C-200 Fuel Oil Tank Checked	√	

Eyewash Stations and Lights					
A. C-607 Battery	√		E. Lab	√	
B. Low Bay	√		F. South East Door	√	
C. Chemical Pump Area	√		G. C-600 Transformer Room	√	
D. C-604	√				

Coal Sump Pumps (oil)	√	
Sanitary Sump Pumps (grease)	√	
Check Fire Alarm Pull box lights	√	
Molybdate concentration Chilled Water well	√	
Safety Showers	√	

OPERATOR: _____

FLM: _____

C-611 ROUTINE WEEKLY DUTIES & INVENTORY

Date:_____

			INITIAL
DIKES	**1. FUEL OIL**	**Drains capped, no standing water, no sheen or no visual damage**	
	2. POLYMER		
C-611-O OVERFLOW		**@ _____%**	
INVENTORY DIESEL FUEL TANK _____ INCHES X 23 = _____gal.			
INVENTORY CHEMICAL STORAGE BINS, % FULL			
C-611-B	**LIME**		
	FERRIC		
	SODA ASH		
C-611-U	**LIME**		
	FERRIC		
	SODA ASH		
C-611-A	**POLYMER**		
INVENTORY CHEMICAL REAGENTS		Attach log sheet	
SAFETY SHOWER INSPECTIONS		Log Book	
SAA – GSA INSPECTIONS		Log Book	
PHOSPHATE BAGS IN C-611-H		**RECID #00476 _____**	
CRITICAL EQUIPMENT	**C-611-U EMERGENCY GENERATOR**		
	VALVE WRENCH GENERATOR		
	6" PUMPS (2)		

REMARKS/NEEDS_____

_____

_____

C-611 ROUTINE WEEKLY DUTIES & INVENTORY

Date:_____

ITEM	Container Size	STORES #	RECID #	AMOUNT	MIN.	SUPPLIER	Reorder
Calcium Indicator	3oz btl	65-081-4800	A0286	btl	>3btl	Material Request	
Hardness Buffer Solution	1qt. btl	03-530-1015	86293	btl	>1btl	In Stock	
Hardness Indicator Powder	3oz btl	03-530-1035	86292	btl	>2btl	BPA PO-574902	
Methyl Purple Indicator	32oz btl	03-549-3025	93086	btl	>3btl	In Stock	
PH 10 Buffer	1pt btl	03-508-0275	90038	btl	>8btl	In Stock	
PH 7 Buffer	1pt btl	03-508-0265	90037	btl	>8btl	In Stock	
PH Probe Storage Solution	1pt btl	65-181-3520	L5091	btl	>8btl	In Stock	
Phenolphthalein	1pt btl		00388	btl	>1b	Lab	
Potassium Chloride	500gram btl		00497	btl	>2btl	Util	
Potassium Hydroxide 8N	1qt btl		9562	btl	>1btl	Lab	
LOWER CABINET							
Ammonia Hydroxide	2.5lit	03-008-5123	00	gal	>.5gal	In Stock	
Acetic Acid	1gal btl	3-20-17	00015	gal	>.5gal	Material Request	
Potassium Iodide	1gal btl		00505	gal	>.5gal	Lab	
Sulfuric Acid	1gal btl		93632	gal	>.5gal	Lab	
Versenate Solution	1gal btl		B6010	gal	>.5gal	Lab	
Nitric Acid	1gal btl	03-001-3200	00275	gal	>.5gal	In Stock	
Sodium Hypochlorite	1gal btl	08-020-0355	06410	gal	>.5gal	Material Request	
Diesel Fuel		11-025-0901	A0786			Stores	

OPERATOR	SUPERVISOR

APPENDIX C

FACILITY DIAGRAM

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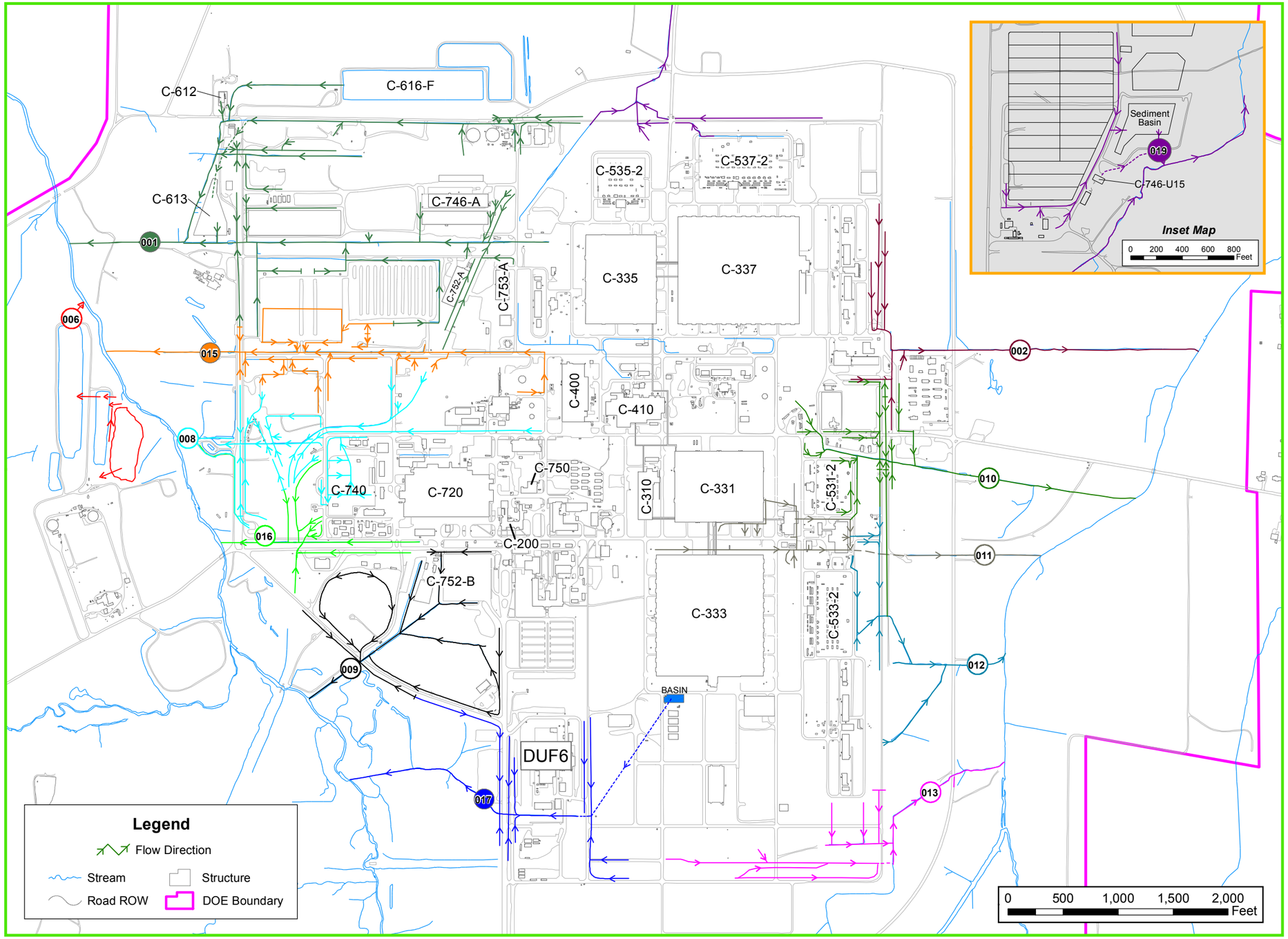
Table C.1. PGDP Major Building and Facilities

PGDP MAJOR BUILDINGS AND FACILITIES		
Administration Buildings	***Electrical Switchyards***	***Cooling Towers & Pumphouses***
C-100 C-102 C-101 C-103	C-531 C-535 C-533 C-537	C-631 C-635 C-633 C-637
Process Buildings	***Maintenance & Stores Buildings***	***Waste Storage Areas***
C-310 C-333 C-315 C-335 C-331 C-337	C-720 C-728 C-724 C-741 C-725 C-744 C-726 C-750	C-733 C-746-Q1 C-746-A C-752-A C-746-B C-753-A C-746-M C-754 C-746-Q
Guard & Fire Headquarters	***Central Control Building***	***Operations Office Buildings***
C-200 (Spill equipment location)	C-300	C-302 C-304
Plant Laboratory	***Drying Agent Storage Building***	***Waste Processing***
C-709 C-710	C-350	C-757
Parking Lots	***Scrapyards***	***Chemical Operations***
C-810 C-811	C-746-C C-746-E1 C-746-C1 C-746-P C-746-D C-746P1 C-746-E	C-400 C-409 C-410-D C-410-K C-410-L (Spill equipment location)
Toll Transfer & Sampling Building		***Cylinder Yards***
C-360		C-745-A C-745-L C-745-B C-745-M C-745-C C-745-N C-745-D C-745-P C-745-E C-745-Q C-745-F C-745-R C-745-G C-745-S C-745-H C-745-T C-745-J C-745-U C-745-K
Utilities		
C-600 Steam Plant C-611 Water Treatment Facility C-615 Sewage Disposal Plant C-616 Liquid Pollution Abatement Facility		

Table C.2. PGDP Effluent Ditches

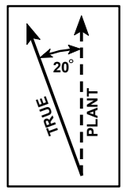
Effluent Ditches	Major Drainage Areas
001	C-335 C-337 C-535 C-537 C-635 C-616 C-746-A C-746-B C-746 Scrapyards
002	C-337 C-637 C-635
008	C-310 C-331 C-400 C-409 C-410 C-600 C-631 C-720 C-740 C-727 C-615
009	C-100 C-200 C-300 C-310 C-331 C-333 C-720 C-750 C-810 C-811
010	C-331 C-531
011	C-315 C-331 C-333 C-533 C-620 C-531
012	C-333 C-533 C-633 C-746-Q
013	Cylinder Yards
015	Cylinder Yards
016	C-743
017	Cylinder Yards
019	C-746-U



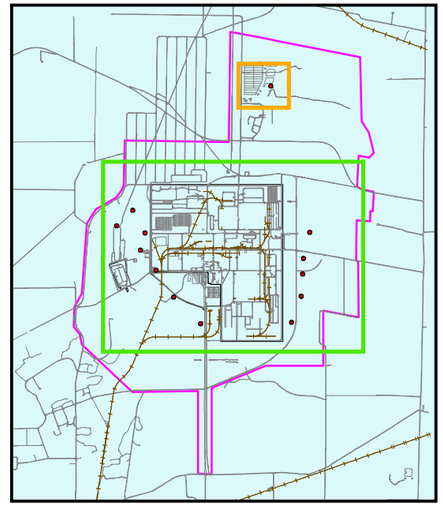
Kentucky Pollutant Discharge Elimination System (KPDES)

KY0004049

001 001, 002, 006, 008
009, 010, 011, 012
013, 015, 016, 017
019, 020*



* Note: KPDES 019 & 020 are in the same location.



U.S. DEPARTMENT OF ENERGY
DOE PORTSMOUTH/PADUCAH PROJECT OFFICE
PADUCAH GASEOUS DIFFUSION PLANT

FLUOR

Figure C.1. Facility Diagram with KPDES Outfall Locations and Flow Direction

This figure shows storm water flow. Some of the depicted structures shown may have been demolished as part of the mission of the site, but would not have impacted the surface water storm flow path.

Figure No. KPDES_Outfall_Locations.mxd
Date: 10-09-2017

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