

**OIL SPILL PREVENTION CONTROL AND
COUNTERMEASURE PLAN**

**Wake Forest University
Winston-Salem, North Carolina**

**November 2008
Revised December 2008
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Revised July 2011**



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FACILITY INFORMATION

TOPIC	INFORMATION
Facility Name	Wake Forest University
Main Campus Mailing Address	1834 Wake Forest Road Winston-Salem, NC 27109
EH&S Main Telephone Number	336-758-7189
Oil SPCC Coordinator	Steve Fisenne, Environmental Specialist 336-758-3089
Alternate Oil SPCC Coordinators	Michelle Lennon, Director of Environmental Health & Safety 336-758-5385 Scott Frazier, Assistant Director of Environmental Health & Safety 336-758-4329
County	Forsyth
Facility Operations	Private university
Owner/Operator	Wake Forest University

REGULATORY REQUIREMENTS CROSS REFERENCE TABLE

APPLICABLE REGULATORY REQUIREMENTS	CHAPTER OF OIL SPCC PLAN
Oil Spill Prevention Control and Countermeasure Plan	40 C.F.R. Part 112
Professional Engineer Certification § 112.3(d)	Section 1.7
Maintenance and availability of complete plan § 112.3(e)	Section 1.6
Amendments and plan review every 5 years § 112.5	Sections 1.4 and 1.5
Qualified facility requirements § 112.6	Section 1.5
Discussion of facility's conformance with 40 C.F.R. Part 112 § 112.7(a)(1)	Section 1.1
Description of physical layout of the facility § 112.7(a)(3)	Chapter 2 and Appendix B
Facility Diagrams § 112.7(a)(3)	Figure 2-1 and Appendix B
Type of oil in each container and its storage capacity § 112.7(a)(3)(i)	Chapter 3 and Tables 3-1, 3-2, 3-4 and 3-4
Discharge prevention measures (including procedures for routine handling of products) § 112.7(a)(3)(ii)	Chapters 3 and 4
Discharge/drainage controls around containers/structures § 112.7(a)(3)(iii)	Chapter 3
Procedures for the control of a discharge § 112.7(a)(3)(iii)	Chapter 6
Countermeasures for discharge discovery, response, and cleanup (including facility and contractor capability) § 112.7(a)(3)(iv)	Chapter 6
Methods of disposal of recovered materials in accordance with applicable legal requirements § 112.7(a)(3)(v)	Section 6.5
Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom the facility has response agreements, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge. § 112.7(a)(3)(vi)	Table 6-1

APPLICABLE REGULATORY REQUIREMENTS	CHAPTER OF OIL SPCC PLAN
Information and procedures to enable a person to report a discharge as described in 40 C.F.R. § 112.7(a)(4)	Chapter 9, Table 6-1
Prediction of direction, rate of flow and total quantity of oil as a result of each type of major equipment failure. § 112.7(b)	Chapter 3 and Tables 3-1, 3-2, 3-4 and 3-4
Appropriate containment and/or diversionary structures. § 112.7(c)	Chapter 3 and Tables 3-1, 3-2, 3-4 and 3-4
Demonstration of impracticability of secondary containment § 112.7 (d)	Section 1.4
Inspections, Test, and Records	40 C.F.R. § 112.7(e)
Inspections and tests performed in accordance with written procedures. Written procedures and records of inspections and tests signed and kept with Plan for at least three years.	Chapter 4
Personnel Training and Discharge Prevention Procedures	40 C.F.R. § 112.7(f)
(1) Oil-handling personnel trained in operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the facility SPCC Plan.	Chapter 7
(2) Designated person responsible for spill prevention.	Sections 1.2 and 4.1
(3) Schedule and conduct spill prevention briefings for oil-handling personnel at least once each year.	Section 7.2
Security	40 C.F.R. § 112.7 (g)
(1) Each handling, processing or oil storage facility fully fenced entrance gates are locked and/or guarded when the facility is unattended.	Chapter 8
(2) Flow and drain valves that directly discharge out are locked in closed position when not operational.	Section 8.3
(3) Oil pump starter controls locked in “off” position or only accessible to authorized personnel when not in use.	Section 8.3
(4) Pipeline loading/unloading connections capped when not in service.	Section 8.3
(5) Adequate facility lighting to discover spills and prevent vandalism.	Section 8.1

APPLICABLE REGULATORY REQUIREMENTS	CHAPTER OF OIL SPCC PLAN
Facility Tank Car and Tank Truck Loading/Unloading Rack	40 C.F.R. § 112.7(h)
(1) Quick drainage systems used in areas without catch basins or treatment facility designed to handle discharges; containment designed to hold at least the maximum capacity of a single compartment of a tank car or tank truck loaded or unloaded at the facility.	Not Applicable
(2) Warning lights, physical barriers, or other measures provided to prevent truck departure prior to line disconnection.	Section 3.6
(3) Inspection of drains and outlets prior to filling and departure of tank cars and trucks.	Section 3.6
Brittle Fracture Evaluation	40 C.F.R. § 112.7(i)
Field-constructed aboveground containers that have undergone repair, alteration, reconstruction, a change in service, or have discharged oil have been evaluated for risk of discharge or failure due to brittle fracture.	Not Applicable
Conformance with Applicable State Rules	40 C.F.R. § 112.7(j)
Discussion of conformance with applicable requirements of any applicable more stringent State rules, regulations or guidelines.	Section 1.1
Qualified Operational Equipment	40 C.F.R. § 112.7(k)
Requirements for qualified oil-filled operational equipment	Section 1.1
Facility Drainage	40 C.F.R. § 112.8(b)
(1) Restrain diked drainage areas by valves.	Not Applicable
(2) Use of manual open-and-closed drain valves to drain diked areas.	Not Applicable
(3) Drainage of undiked areas into ponds, lagoons and catch basins to retain oil spills.	Not Applicable
(4) Design of in-plant ditches with diversion systems to return spilled oil to facility.	Not Applicable
(5) Engineer facility drainage systems to prevent discharges in case of equipment failure or human error.	Not Applicable
Bulk Storage Containers	40 C.F.R. § 112.8(c)
(1) Container materials and construction compatible with products stored and conditions of storage.	Chapter 3
(2) Adequate and impervious secondary containment for tanks.	Chapter 3 and Table 3-1
(3) Requirements for drainage of diked rainwater bypassing treatment system (valve normally closed, valve opened only during drainage, inspect rainwater, records kept).	Not Applicable

APPLICABLE REGULATORY REQUIREMENTS	CHAPTER OF OIL SPCC PLAN
(4) Cathodic protection and regular leak testing for new buried metallic tanks.	Not Applicable
(5) Partially buried metallic tanks.	Not Applicable
(6) Integrity test aboveground containers on a regular schedule and when material repairs are done.	Chapter 4
(7) Internal heating coils monitored or treated to prevent leakage.	Not Applicable
(8) Containers are engineered or updated in accordance with good engineering practices to avoid discharges: high level alarms, high level pump cutoffs, direct signal communication between the container gauger and the pumping station; fast response system for determining the liquid level of each container; regular testing of devices.	Chapters 3, 4, and 5
(9) Plant effluent disposal facilities monitored regularly to detect system upsets.	Not Applicable
(10) Prompt correction of visible leaks; prompt removal of oil accumulated in diked areas.	Sections 4.1 and 6.1
(11) Portable tanks are positioned or located to prevent a discharge and have been provided with adequate secondary containment.	Not Applicable
Transfer Operations	40 C.F.R. § 112.8(d)
(1) Cathodic protective coating for buried piping, exposed pipes inspected for corrosion.	Section 4.4
(2) Terminal connections on out of service piping capped and marked as to origin.	Not Applicable
(3) Pipe supports properly designed.	Section 3.4
(4) Aboveground valves and piping inspected regularly, integrity and leak testing conducted for buried piping.	Section 4.4
(5) Aboveground piping protected by notifying vehicular traffic entering facility.	Section 3.4
Substantial Harm Criteria	40 C.F.R. Part 112 Appendix C
Substantial harm criteria certification to exempt facility from preparing a Facility Response Plan	Section 1.1 and Appendix C
Oil Spill Contingency Plan	40 C.F.R. Part 109
Definition of authorities, responsibilities and duties of all those involved with oil removal operations. § 109.5 (a)	Chapter 6

APPLICABLE REGULATORY REQUIREMENTS	CHAPTER OF OIL SPCC PLAN
Notification Procedures	40 C.F.R. § 109.5 (b)
(1) Identification of critical water use areas.	Section 2.2
(2) Names, telephone numbers and addresses of those responsible for handling oil discharge as well as agencies that must be notified.	Table 6-1 and Chapter 9
(3) Access to a reliable communications system for timely notification and coordination with other oil removal plans.	Section 8.2
(4) Pre-arranged procedure for requesting assistance during major disaster.	Chapter 6
Provisions to Assure and Commit Necessary Resources	40 C.F.R. § 109.5 (c)
(1) Identify and inventory available equipment, resources and supplies.	Sections 6.1 and 6.2 and Table 6-2
(2) Estimate of equipment, materials and supplies needed to remove maximum anticipated oil discharge.	Section 6.2
(3) Arrangements and agreements developed in advance to acquire necessary materials to respond to a discharge.	Section 6.2
Actions to be Taken After Discovery and Notification of Oil Discharge	40 C.F.R. § 109.5 (d)
(1) Designated oil discharge response operating team.	Chapter 6, Table 6-1
(2) Predesignation of a qualified oil discharge response coordinator.	Sections 6.3 and 6.4
(3) Response operations center and communications system.	Section 8.2
(4) Varying response efforts depending on oil discharge severity.	Chapter 6
(5) Order of priority for protecting water uses.	Section 2.2
Recovery of Damages/Enforcement Measures	40 C.F.R. § 109.5 (e)
Procedures to facilitate recovery of damages and enforcement measures as provided for by State and local statutes and ordinances.	Section 1.3

RECORD OF CHANGES

DATE	DESCRIPTION OF CHANGE (S)	PAGE NUMBER
December 2008	Removed references to Benson UST	Section 3.1 and Appendix B
	Denote WFU boundaries on Site Location Map	Figure 2-1
	Corrected name of Safety Response Team	Section 6.1 and Appendix A
	Added additional spill contractor and internal emergency contacts	Table 6-1
	Replaced building numbers with names on emergency equipment list	Table 6-2
	Minor revisions to Spill Report Form	Figure 6-2
	Revised elevator inspection responsibility to WFU	Section 4.7
	Added internal emergency notification requirement	Section 9.1
	Indicated that underground piping associated with USTs # 1 and # 2 will be removed with the USTs	Sections 3.2.1.1 and 3.7
	Indicated that bollards have been provided for Tanks # 7 and # 18	Sections 3.2.1.6, 3.2.2.2, and 3.7
	Updated the information on the piping associated with UST # 3	Sections 3.2.1.2 and 3.7
	Adjusted the location of USTs # 1 and # 2 on Facility Diagram	Appendix B
	Added monthly inspection checklists for transformers and hydraulic elevators	Appendix D
November 2009	Removed former Tanks # 1 and # 2 and replaced them with new tanks using the same numbers	Chapter 3 and Figure B-1
	Removed kitchen grease Tanks # 15 and # 16 which were replaced with 30-gallon drums	Chapter 3 and Figure B-1
	Removed the Required Site Improvements section – all completed	Section 3.7

DATE	DESCRIPTION OF CHANGE (S)	PAGE NUMBER
	Removed references to the Safety Response Team	Chapter 6 and Table 6-1
	Added new tank drawings	Appendix E
	Revised formal testing requirements for Tank # 1	Section 4.3.2
	Added supplemental information for NRC release reporting	Section 9.1.1
July 2011	Name change – Michelle Adkins to Michelle Lennon and change home phone number	Facility Information and Table 6.1
	Removed Tank 14	Section 3.2.2
	Added Tank 19 at BB&T Field	Section 3.2.2 and Table 3.1
	Changed total number of elevators from 30 to 33	Section 3.3.1
	Added 2 Elevators at South Residence Hall, 1 at Welcome Center and 1 at Bridger Field House	Section 3.2.2 and Table 3.2
	Changes total number of transformers to 42	Section 3.3.3
	Added transformers at South Residence Hall, Welcome Center and Palmer/Piccolo, SS Center	Section 3.3.3 and Table 3.4
	Replaced Matthew Cullinan with Hof Milam on Emergency Contact List	Table 6.1
	Added “and Coal Yard Storage Pad” to item locations on Spill Response Equipment list	Table 6.2

1. PLAN OVERVIEW

1.1 PURPOSE OF THIS PLAN

The U.S. Environmental Protection Agency (EPA) has promulgated regulations requiring Wake Forest University (WFU) to adopt an Oil Spill Prevention Control and Countermeasure Plan (Oil SPCC Plan), because its oil storage capacity exceeds applicable regulatory thresholds. See 40 C.F.R. § 112.1(d)(2)(ii). Specifically, WFU's Reynolda Campus has approximately 31,636 gallons of aboveground oil storage capacity, which exceeds the 1,320-gallon aboveground threshold. WFU's BB&T field exceeds the aboveground storage capacity threshold, with 3,712 gallons of oil storage capacity. This Plan is designed to comply with all of the applicable Oil SPCC planning provisions of 40 C.F.R. Part 112. This Plan also complies with the updated Oil SPCC regulations that were revised in July 2002, December 26, 2006, and May 10, 2007.

In accordance with 40 C.F.R. § 112.20, WFU is also required to determine whether it is a high-risk facility that poses a threat of *substantial harm* to the environment, thereby triggering the Facility Response Plan requirements and associated appendices. WFU does not meet the substantial harm criteria, and is therefore not required to prepare and submit a Facility Response Plan to EPA. An Applicability of Substantial Harm Criteria Checklist and Certification is included in Appendix C.

Because WFU is not able to meet the general secondary containment requirements at 40 C.F.R. § 112.7(c) for some of its oil-filled electrical transformers and hydraulic elevators, the facility has instead committed to the following plan of action as allowed in the regulations at 40 C.F.R. § 112.7(k). WFU is allowed to take advantage of this option because its equipment meets the definition of "qualified oil-filled operational equipment" (i.e., has not had a discharge of oil from operational equipment as defined in 40 C.F.R. § 112.1(b)). Accordingly, WFU has:

1. Prepared an Oil Spill Contingency Plan according to the requirements of 40 C.F.R. Part 109. The goal of the Oil Spill Contingency Plan is to ensure timely, efficient, coordinated, and effective action to minimize damage resulting from oil discharges. The requirements of the Oil Spill Contingency Plan are detailed in the Regulatory Requirements Cross Reference Table and incorporated into this Oil SPCC Plan;
2. Made a written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful; and
3. Established and documented procedures for inspection of equipment to detect defects and/or oil discharges.

See 40 C.F.R. § 112.7(k).

Each chapter of this Oil SPCC Plan identifies the federal and state laws and regulations it satisfies. A Regulatory Requirements Cross Reference Table, preceding Chapter 1, identifies applicable regulatory requirements and the Plan chapter(s) or section(s) that satisfy them. WFU has adopted this Regulatory Requirements Cross Reference Table because this Plan does not follow the exact sequence specified in 40 C.F.R. § 112.7 of the regulations.

The WFU tanks covered in this plan are also subject to the North Carolina Department of Environment and Natural Resources (DENR) spill reporting requirements as outlined in Chapter 9.

1.2 OWNERSHIP INFORMATION AND FACILITY CONTACT

This Plan covers the following WFU facilities, owned by WFU and located in Winston-Salem, North Carolina:

- Reynolda Campus located on Wake Forest Road
- BB&T Field located between Reynolds and Deacon Boulevards, approximately one mile from Reynolda campus

The Oil SPCC Coordinator is the primary facility contact for this Plan and the designated person responsible for oil spill prevention at this facility. This individual is identified in the Facility Information Table following the Table of Contents and in Table 6-1.

1.3 ADMINISTRATION APPROVAL AND COMMITMENT OF RESOURCES

WFU is committed to conducting its operations in a safe and environmentally responsible manner. All employees are expected to promote and foster a safe work environment. Precautionary measures, including the adoption of this Oil SPCC Plan, have been taken to minimize the potential for incidents that could result in oil-related emergencies.

WFU Administration fully supports the adoption and implementation of this Plan. This commitment includes providing the resources, equipment, and materials required to expeditiously control and remove any harmful quantity of oil that may be discharged. WFU agrees to comply with reasonably determined enforcement measures as provided for by State and local statutes and ordinances. The Oil SPCC Coordinators are thoroughly familiar with the campuses' operations, oil storage locations, and this Plan. They are prepared to implement this Plan during an emergency, and are committed to ensuring oil spill preventive measures are addressed during non-emergency times.

Wake Forest University:

Mr. James Alty, Associate Vice President for Facilities & Campus Services

1.4 AMENDMENTS TO PLAN

This Oil SPCC Plan is intended to be an integral part of the operations at WFU. To increase its effectiveness, the Oil SPCC Plan will be amended by WFU whenever:

1. It fails in an emergency;
2. The covered campuses change significantly in design, construction, operation, or maintenance in a manner likely to impact the effectiveness of this Plan;
3. Some other circumstance significantly increases the potential for releases of oil products or other changes in the response necessary in any emergency;
4. An exercise or emergency response drill indicates an amendment is necessary;
5. Either responsible WFU personnel or the response equipment list changes;
6. The Regional Administrator of the EPA deems a change to be necessary; or

7. There is a change in applicable statutes or regulations.

1.5 OIL SPCC COMPLIANCE INSPECTION AND PLAN REVIEW

A complete review and evaluation of this Oil SPCC Plan will be conducted at least once every five years, as required by the regulations. The review and evaluation will be documented and WFU will sign a statement as to whether the Plan will be amended. The statement will read: “I have completed a review and evaluation of the Oil SPCC provisions of WFU’s Oil SPCC Plan on [date] and [will/will not] amend the Plan as a result.” If warranted, based on the review and evaluation, WFU will amend the Plan within six months of the review to include more effective prevention and control technology if such technology: (1) significantly reduces the likelihood of a discharge from the facility; and (2) has been field-proven at the time of review. WFU will implement such amendments within six months of the preparation of any amendments to the Plan. The review log for this Oil SPCC Plan is included as Figure 1-1.

Because WFU has an aboveground oil storage capacity of greater than 10,000 gallons, it does not meet the definition of a “qualified facility,” and therefore may not self-certify its Oil SPCC Plan. The initial Plan and any technical amendments must be certified by a licensed Professional Engineer (P.E.)

See 40 C.F.R. §§ 112.3(g) and 112.6.

1.6 INTERNAL PLAN COPIES

A complete copy of this Plan will be maintained in the following locations:

- WFU EH&S Office
- University Police Dispatch
- Central Heating Plant

The Plan will be available for review during normal working hours. When amendments are necessary, copies of the amendments will be included in all WFU Plan copies. See 40 C.F.R. § 112.3(e).

1.7 ENGINEER'S CERTIFICATION

I hereby certify that I am familiar with the oil storage facilities at the covered WFU campuses and with this Oil SPCC Plan. I attest that:

1. I am familiar with the requirements of 40 C.F.R. Part 112;
2. My agent has visited and examined the facilities;
3. This Oil SPCC Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 C.F.R. Part 112;
4. Procedures for required inspections and testing have been established; and
5. This Plan is adequate for the WFU facilities.

40 C.F.R. § 112.3(d)

James Ekedahl, P.E.

Name of Registered P.E.

Date _____

Signature of Registered P.E.

Registration No. 31048
State: North Carolina

Figure 1-1: Oil SPCC Provisions Review Log

Review #1

“I have completed a review and evaluation of WFU’s Oil SPCC Plan on _____ and [will/will not] amend the Plan as a result.”

Name: _____

Signature: _____

Title: _____

Review #2

“I have completed a review and evaluation of WFU’s Oil SPCC Plan on _____ and [will/will not] amend the Plan as a result.”

Name: _____

Signature: _____

Title: _____

Review #3

“I have completed a review and evaluation of WFU’s Oil SPCC Plan on _____ and [will/will not] amend the Plan as a result.”

Name: _____

Signature: _____

Title: _____

Review #4

“I have completed a review and evaluation of WFU’s Oil SPCC Plan on _____ and [will/will not] amend the Plan as a result.”

Name: _____

Signature: _____

Title: _____

2. FACILITY DESCRIPTION

Wake Forest University is one of the leading small private universities in the country, annually ranking among the top 30 national universities. With about 4,000 undergraduates, WFU combines the personalized attention of a small liberal arts college with the resources, technology and co-curricular opportunities of a large university. WFU is distinguished by its small classes, community atmosphere, challenging curriculum, dedicated teacher-scholars and beautiful campus. Graduate programs in select areas, a growing divinity school, and nationally ranked schools of law, business and medicine enhance the University's reputation for academic excellence.

2.1 CAMPUS LAYOUT AND DRAINAGE

The WFU facilities covered by this Oil SPCC Plan are located in Winston-Salem, in north-central North Carolina. See Figure 2-1 for a Site Location Map. Following is a description of the site layout and drainage for each campus.

2.1.1 Reynolda Campus

The Reynolda campus is comprised of over 50 buildings on approximately 320 acres. The campus is composed of primarily wooded and landscaped grassy areas, with some paved parking, road, and walking surfaces. Approximately 33% of the site consists of impervious surfaces. Reynolda Campus is bordered by primarily residential property. The campus is situated on a small hill, and storm water sheet flow is directed to the southwest to unnamed tributaries to Silas Creek. Storm water is also collected from the site via a system of drainage ditches and catch basins, which discharge to the same unnamed tributaries to Silas Creek.

WFU recently conducted a survey to determine where building floor drains discharge. Unless permitted under a NPDES permit, all building floor drains discharge to the sanitary sewer system which is operated by the City of Winston-Salem.

2.1.2 BB&T Field

BB&T Field is located approximately one mile from Reynolda Campus. The approximately 35-acre facility is surrounded by commercial property. BB&T Field contains the football stadium and the newly constructed Deacon Towers. The site is composed primarily of paved parking and walking surfaces, with some grassy areas. Storm water is collected through a catch basin system from the parking areas and roadways and directed to an unnamed creek that flows along the west side of the property. Storm water from the playing field is managed in a sand filtration system under the field.

Building floor drains discharge to the sanitary sewer system which is operated by the City of Winston-Salem.

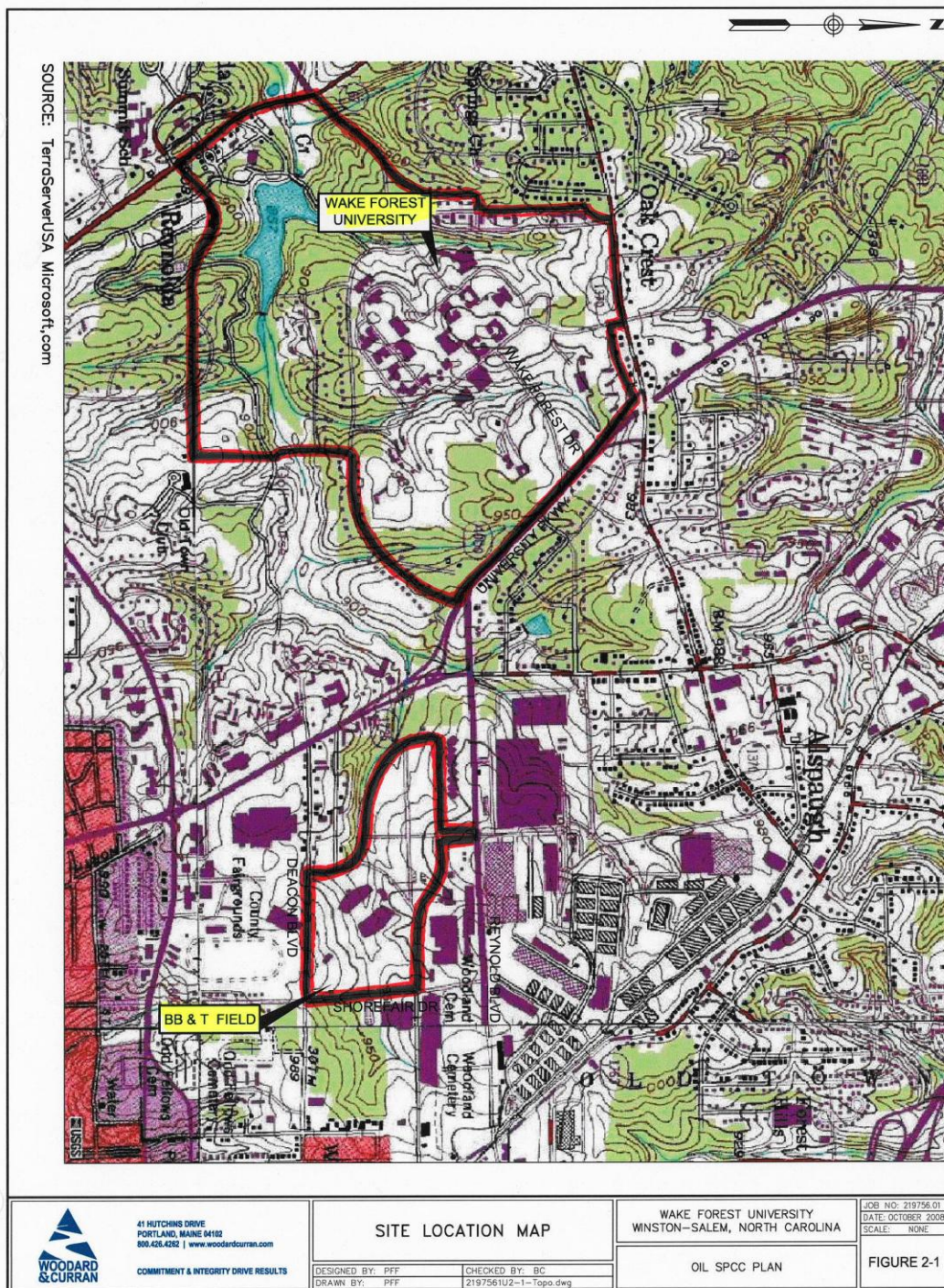
2.2 CRITICAL WATER USE AREAS

A potential oil release at WFU is not expected to impact any critical water use areas. The only surface water bodies on Reynolda Campus or at BB&T Field are tributaries to Silas Creek. From its source to

Muddy Creek, Silas Creek is designated as a Class C water body.¹ It is unlikely that any significant amount of oil would reach one of these tributaries prior to a release being contained and cleaned up. Protecting surface water bodies and storm water drains is the first priority in any oil release response undertaken by WFU. A secondary priority is preventing oil from entering floor drains that discharge to the sanitary sewer. No other potential water impacts from an oil release are anticipated.

¹ Class C waters are protected for uses such as secondary recreation, fishing, wildlife, fish consumption, aquatic life including propagation, survival and maintenance of biological integrity, and agriculture. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner.

Figure 2-1: Wake Forest University and BB&T Field Site Location Map



3. OIL STORAGE, CONTAINMENT, AND DELIVERY PROCEDURES

This chapter identifies and describes WFU's oil storage tanks and equipment, including their design, related secondary containment, diversionary structures, and equipment; and transfer operations and locations. This chapter also identifies the most likely causes of potential spills, predicted spill pathways, probable directions, estimated maximum spill quantities, rates of flow, and satisfies many of the requirements of 40 C.F.R. §§ 112.7 and 112.8 (including 40 C.F.R. §§ 112.7(a)(3)(i)-(iii) and 112.7(h) and 112.8(b) and (c)). Locations of bulk oil storage containers and operating equipment are identified on the Facility Diagrams in Appendix B.

3.1 BULK OIL STORAGE

WFU stores oil in aboveground storage tanks (ASTs), underground storage tanks (USTs), electrical transformers and hydraulic elevator reservoirs. The Facility Diagrams in Appendix B show the locations and contents of each bulk oil storage container and piece of operating equipment. The diagrams also shows piping and oil transfer locations (AST and UST fill ports), as required by 40 C.F.R. § 112.7(a)(3).

WFU stores diesel and gasoline for vehicle and equipment fueling purposes and diesel and No. 2 fuel oil for heating and emergency power generation on campus. Used oil, motor oil, and waste cooking oil are also stored in ASTs. The material and construction of all oil storage containers maintained by WFU are compatible with the materials stored and the conditions of storage such as pressure and temperature. Additionally, oil storage containers are constructed in accordance with good engineering practices. Table 3-1 provides the following information for the USTs and ASTs at WFU: Tank Identification Number; Location; Total Storage Capacity (gallons); Contents; Material of Construction; Means of Secondary Containment; Year Installed; and Predicted Flow Direction of Potential Release.

WFU stores oil in the following equipment with capacities of 55 gallons or more: 34 electrical transformers (owned by the university), a trash compactor, a stage lift, and 28 hydraulic elevators. Tables 3-2, 3-3 and 3-4 contain relevant information about this equipment, including: Campus Location; Oil Storage Capacity (gallons); and Predicted Flow Direction of Potential Release.

A 10,000-gallon UST containing gasoline for vehicle fueling is located at Fleet Services. Because this UST is subject to the federal UST regulations at 40 C.F.R. Part 280 (and as delegated to North Carolina and implemented at 15A NCAC Subchapters 2N, 2O and 2P), it is not subject to the Oil SPCC regulations, and is not covered by this plan. However, to provide a more complete inventory of oil storage facilities, some information on the tank is provided in this plan. The Fleet Services UST was installed in 1994 and is constructed of double-walled fiberglass reinforced plastic with double-walled piping. The tank is equipped with a catchment basin and electronic interstitial space and high level monitoring through a Veeder Root TLS-350 system. The UST's location is shown on Figure B-1 in Appendix B.

Other oil containing devices located at WFU that are not included in this Plan include several grease interceptors. Because these are flow-through wastewater treatment units, they do not fall under Oil SPCC planning rules.

WFU does not store any oil products in 55-gallon drums.

3.2 BULK STORAGE TANKS AND CONTAINERS

The following subsections provide details on the ASTs and USTs located at Reynolda Campus and BB&T Field. Potential oil release pathways and additional AST and UST details are provided in Table 3-1. The rate of flow of a potential spill from any of the tanks or containers would depend on several factors (e.g., the size of the leak and liquid head above the leak) and is difficult to determine accurately until all factors associated with a specific spill are known. Because all WFU aboveground bulk storage containers are provided with secondary containment, a release from the containers would remain within the secondary containment. However, Table 3-1 does provide potential oil release pathways in the event of secondary containment failure. The maximum potential spill volumes for the aboveground tanks are equivalent to their capacities (i.e., the maximum spill quantity for a 275-gallon AST is 275 gallons). However, if an incident occurs during tank filling, the potential volume of the release is equal to the capacity of the delivery or pick up vehicle.

3.2.1 Reynolda Campus USTs and ASTs

3.2.1.1 Tank # 1

Tank # 1 is a 15,000-gallon double-walled steel AST located outside the Central Heating Plant (CHP). The tank was installed in 2009 and contains No. 2 fuel oil which is used as back-up fuel for the CHP boilers. The tank is supported by a steel saddle and is equipped with a product level gauge, interstitial leak detection, and an audible overfill alarm. The alarm is set to sound when the tank is 85% full and to shut off the pump at 90% full. The secondary containment drain valve is maintained in a closed position. Tank # 1 is filled via a remote fill port located within a spill box and situated over a small concrete containment area. There is a gauge at the fill port to monitor the amount of oil pumped into the AST. The fill piping to the tank and the fuel and return lines from the tank to the boilers are constructed of single-walled black steel piping. All piping is aboveground and is properly supported. The fuel from the AST is rarely used as it is only the back-up fuel for the boilers. If the piping leaked at a time when the boilers were not running on oil, only the oil in the piping at the time would be released. The tank and the piping are protected from vehicular traffic by concrete-filled pipe bollards.

3.2.1.2 Tank # 2

Tank # 2 is a 1,000-gallon double-walled AST located outside Benson University Center. The tank was installed in 2009 and contains diesel for the emergency generator located in Benson. Tank # 2 is situated on a steel saddle within a concrete containment area. The tank is equipped with a product level gauge and an audible overfill alarm. The secondary containment drain valve is maintained in a closed position. The tank is equipped with a port to allow inspections of the tank's interstitial space. The tank's fill port is located on top of the tank within a catchment basin. The piping associated with the AST is constructed of single-walled iron. The aboveground portion of the piping is properly supported. The underground piping is protected from corrosion and damage by a hardened foam coating. The fuel from the AST is rarely used as the generator only operates during monthly checks and during infrequent emergency situations. If the piping leaked at a time when the generator was not running on oil, only the oil in the piping at the time would be released. The tank is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.1.3 Tank # 3

Tank # 3, located at the Worrell Chiller Plant, is a 10,000-gallon double-walled fiberglass reinforced plastic UST installed in 1992. Tank # 3 contains No. 2 fuel oil as a back up fuel for the Worrell boilers and a primary fuel for the emergency generator located outside the plant. The UST is equipped with a Veeder Root TLS-3000 electronic monitoring system for its interstitial space and product level. The tank has an audible overfill alarm outside near the fill port. The piping associated with the UST is constructed of single-walled steel. The underground portion of the piping appears to be protected with a plastic wrap. The piping enters the boiler room at floor level, is directed to a pump, and then to the boilers. The piping in the boiler room runs within a recessed trench that has drains. The piping also runs underground from the UST to the generator. The fuel from the UST is rarely used as it is only the back-up fuel for the boilers and the generator only operates during monthly checks and in infrequent emergency situations. If the piping leaked at a time when the boilers/generator were not running on oil, only the oil in the piping at the time would be released.

3.2.1.4 Tank # 4

Tank # 4, located inside the Fleet Services garage, is a 225-gallon double-walled steel AST containing motor oil. The tank is equipped with a product level gauge and was installed in 2008. Product is dispensed from the AST by a pump mounted to the top of the tank. There is no piping associated with Tank # 4. The tank is located in a storage room, removed from potential traffic hazards.

3.2.1.5 Tank # 5

Tank # 5, located outside the Fleet Services garage, is a 550-gallon steel AST within a fully-enclosed steel containment shell. The tank was installed in 1990 and contains diesel. The tank is equipped with a high level vent whistle and an access port to check for leaks within the containment structure. Because the AST does not have a product level gauge, the product level is manually checked prior to receiving deliveries. Single-walled iron piping runs from the AST to the dispensing pump. The fill port is located on the tank, within a catchment basin. The AST is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.1.6 Tank # 6

Tank # 6 is a 500-gallon double-walled steel AST located outside the Fleet Services garage. The tank was installed in 2008 and contains used oil. The tank is equipped with a product level gauge, a high level vent whistle, and an access port to check the interstitial space. The AST is filled via PVC piping that runs from within the garage to the AST located outside. A pump in the garage is used to transfer used oil to Tank # 6. The fill port is located on the tank, within a catchment basin. The AST is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.1.7 Tank # 7

Tank # 7 is a 250-gallon double-walled steel AST located outside the Athletics maintenance facility. The tank was installed in 2008 and contains used oil. The tank is equipped with an access port to check the interstitial space. The tank is equipped with a product level gauge for overfill protection. Only small volumes of used oil are transferred into the tank. The tank is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.1.8 Tank # 8

Tank # 8 is a 750-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST is located outside CHP, and according to WFU staff was installed in 1990. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 8.

3.2.1.9 Tank # 9

Tank # 9 is a 500-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST is located outside Information Systems, and according to WFU staff was installed in 1995. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 9. The tank is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.1.10 Tank # 10

Tank # 10 is a 300-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST was installed in 1992 and is located in a metal shed outside Winston Hall. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 10.

3.2.1.11 Tank # 11

Tank # 11 is a 225-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST was installed in 1997 and is located in a partially open utility pit at the basement level of Reynolds Library. The open overhead portion of the pit is covered with a metal grate. The AST is equipped with a product level gauge. The AST's remote fill port is located at ground level, above the tank at the grate. The fill piping is constructed of single-walled steel.

3.2.1.12 Tank # 12

Tank # 12 is a 380-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. According to WFU staff, the AST was installed in 1990 and is located outside Calloway Center in a secured area. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 12.

3.2.1.13 Tank # 13

Tank # 13 is a 300-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. According to WFU staff, the AST was installed in 1982. It is located outside Reynolda Hall in a walled area of the loading dock, accessible through a gate. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 13.

3.2.2 BB&T Field ASTs

3.2.2.1 Tank # 17

Tank # 17 is a 1,244-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST is located outside the northwest corner of the stadium, and was installed in 2008. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 17. The tank is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.2.2 Tank # 18

Tank # 18 is an 800-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST is located outside the northwest corner of the stadium, and was installed in 1997. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 18. The tank is protected from vehicular traffic by concrete-filled pipe bollards.

3.2.2.3 Tank # 19

Tank # 19 is an 80-gallon double-walled steel, integrally-mounted emergency generator tank containing diesel. The AST is located outside the northwest corner of the stadium, and was installed in 2009. The AST is equipped with a product level gauge and its fill port is mounted directly on the tank. There is no piping associated with Tank # 19. The tank is protected from vehicular traffic by concrete-filled pipe bollards.

3.3 OIL-FILLED OPERATIONAL EQUIPMENT

There are any number of potential release scenarios related to the oil-filled operational equipment. The worst case, although extremely unlikely, release scenario would be oil reservoir failure, resulting in complete loss of contents. In this case, the release would be almost instantaneous. The rate of flow for a potential oil release would also be highly variable, being dependent upon the specific circumstances and physical conditions of the equipment location. Again, if we assume a worst case scenario, the entire oil storage contents of the equipment could be released, and if a floor drain or storm drain is in the vicinity, could be released to water. WFU has taken steps to prevent oil releases from equipment, including routine inspections and, where applicable, protection from vehicular traffic with concrete-filled pipe bollards.

3.3.1 Hydraulic Elevators

Thirty three hydraulic elevators are located at WFU. The elevator oil reservoir capacities range from 80 to 225 gallons. In most cases, the buildings provide secondary containment for the hydraulic reservoirs, as most are located in rooms without floor drains. Because some elevators have oil reservoirs that cannot meet the general secondary containment requirements, WFU is complying with the qualified oil-filled operational equipment requirements of 40 C.F.R. § 112.7(k). (See Section 1.1)

Elevator locations, oil storage capacities, and potential oil release pathways are provided in Table 3-2.

3.3.2 Other Hydraulic Equipment

In addition to the hydraulic elevators, WFU has two other pieces of hydraulic equipment with oil storage capacities of 55 gallons or more. Scales Fine Arts Center is equipped with a stage equipment lift whose hydraulic reservoir contains 200 gallons of oil. There is also a trash compactor in the Facilities Coal Yard that has a 76-gallon oil reservoir. Both pieces of equipment meet the general secondary containment requirements.

Equipment locations, oil storage capacities, and potential oil release pathways are provided in Table 3-3.

3.3.3 Electrical Transformers

WFU owns and operates 41 oil-filled electrical transformers on the campus property and five at BB&T Field. The transformers are all located outdoors, and their oil storage capacities range from 61 to 574 gallons. None of the transformers contain PCBs. Because some transformers that cannot meet the general secondary containment requirements (i.e., they are located near storm drains or surface water bodies), WFU is complying with the qualified oil-filled operational equipment requirements of 40 C.F.R. § 112.7(k). (See Section 1.1)

Transformer locations, oil storage capacities, and potential oil release pathways are provided in Table 3-4.

3.4 TANK PIPING

The piping associated with the WFU tanks is constructed of single-walled steel (black iron). According to information provided by WFU, the underground piping associated with Tank # 2 is protected from corrosion and damage by a hardened foam coating. While most of the piping is not provided with secondary containment, the circumstances of the tank systems' use create a very limited potential for an oil release from the piping. Most of the tank systems are utilized only for emergency or back up purposes. In the event of piping failure when the systems are not in use, only the oil in the piping at the time would be released, because the piping exits the top of the tanks, and there would be no draw from the pumps. The maximum amount of oil released in this scenario would vary with the particular tank system, but the maximum would be approximately 25 gallons. If the piping from the CHP AST or the Worrell UST were to rupture when the boilers/generators were running on oil, then approximately 25 additional gallons of oil would be released prior to discovery of and response to the leak. This estimate is based on a maximum flow rate of 6 gallons per minute and an expected operator response time of one to three minutes. The response time for an oil release from the Benson AST piping may be longer, but because the generator draws oil at a slower rate, the maximum amount of oil released prior to discovery is likely to be less than 40 gallons. Table 3-1 describes where potential releases from piping would likely flow.

The pipe supports for aboveground runs were designed in accordance with good engineering practices. Aboveground piping is also protected from vehicular traffic by barriers. Tank piping is shown on the Facility Diagrams in Appendix B.

3.5 TRANSFER AREAS

The oil transfer areas (i.e., the UST and AST fill ports) at WFU are maintained and operated to prevent potential releases from entering drains or surface water. Specifically, oil transfers are monitored (see Section 3.6, below) and countermeasures are immediately taken if a release is imminent or occurring. The most likely oil release scenarios would be a tank overflow or a ruptured hose. The pathway for a

potential release in transfer areas is described in Table 3-1. The potential amount of oil that could be released would be dependent on the particular circumstances; however some generalizations can be made. According to WFU staff, the off-loading rate of delivery vehicles would vary based upon the particular pump used and the gravity feed rate to the tanks. The maximum oil delivery rate would be approximately 25 gallons per minute. It is estimated that the driver and/or WFU staff overseeing the delivery would respond by shutting off the flow from the delivery vehicle within 10 seconds. Therefore, it is expected that less than five gallons of oil would be released during a transfer incident.

WFU does not have any oil loading/unloading racks and is therefore not subject to the requirements 40 C.F.R. § 112.7(h).

3.6 OIL TRANSFER PROCEDURES

Tank truck unloading on campus consists of bulk deliveries of No. 2 fuel oil, gasoline, and diesel to the ASTs and USTs. Oil transfers also occur when used oil and waste cooking oil are removed from campus by vendors. WFU staff and the carrier monitor all deliveries and employ practices for preventing transfer spills and accidental discharges.

The following general procedures and practices are followed by WFU personnel and vendors with respect to AST and UST oil transfer procedures:

1. Oil transfer operations are attended by WFU staff. The driver, operator, or attendant of any delivery vehicle does not leave the area while the oil is being transferred.
2. Oil transfers are usually performed during daylight hours. If transfers must be performed at night, they are performed only under suitable lighting conditions.
3. Oil deliveries are performed only at designated fill pipe/port areas.
4. Nearby stormwater catch basins are protected by absorbent boom or spill mats.
5. Prior to the transfer, the carrier determines that the receiving tank has available capacity to receive the volume of oil to be delivered/removed by using the tank's level gauge or manually checking the tank.
6. The carrier inspects drains and outlets prior to filling and departure of trucks.
7. WFU personnel or the carrier monitor every aspect of the delivery and take immediate action to stop the flow of oil if the working capacity of the tank has been reached or if an equipment failure or related emergency occurs.
8. Smoking, lighting matches, or carrying any flame near the truck during transfer operations is not permitted.
9. Cell phones must be turned off.
10. The delivery/removal truck wheels are to be chocked if the vehicle is on an incline to avoid the possibility of truck movement prior to the completion of oil transfer.
11. Drip pans and/or absorbent material are available on campus in the event of a leak or overflow.
12. Open spring loaded valves are never tied off or blocked.
13. Prior to filling and prior to departure of the truck, any vehicle outlets are closed and inspected for evidence of leakage to prevent leakage of liquid while in transit.

40 C.F.R. § 112.7(h); Best Management Practice

Table 3-1: Bulk Oil Storage Tanks and Containers

Tank Identification Number	Location	Total Storage Capacity (gallons)	Contents	Material of Construction	Means of Secondary Containment	Year Installed	Predicted Flow Direction of Potential Release
1	Central Heating Plant	15,000	No. 2 Fuel Oil	Double-walled steel tank	Double-walled tank	2009	A release during tank filling, due to secondary containment failure, or from outdoor piping would potentially flow over the gravel area surrounding the fill port and seep into the ground. A release from piping in the boiler room would potentially flow to floor drains located throughout the facility.
				Single-walled steel piping	None		
2	Benson University Center	1,000	Diesel	Double-walled steel tank	Double-walled tank and concrete containment area under tank	2009	If it overflowed the containment under the tank, a release during tank filling, due to secondary containment failure, or from outdoor piping would flow over the grassy area surrounding the tank and seep into the ground, potentially reaching a catch basin in the paved area beyond. A release from piping in the generator room would be contained within the building as no floor drains are located in the room.
				Single-walled steel piping	None - no floor drains in generator room		
3	Worrell Chiller Plant (UST)	10,000	No. 2 Fuel Oil	Double-walled fiberglass reinforced plastic tank	Double-walled tank	1992	A release during tank filling would flow over the grassy area surrounding the fill port and seep

Tank Identification Number	Location	Total Storage Capacity (gallons)	Contents	Material of Construction	Means of Secondary Containment	Year Installed	Predicted Flow Direction of Potential Release
				Single-walled steel piping	The underground portion of the piping is in a protective wrap. Neither the aboveground or underground piping has secondary containment.		into the ground. A release from piping in the boiler room would potentially flow to floor drains located throughout the facility. A release from the piping as it connects to the outdoor generator would flow over the surrounding crushed stone and to a catch basin approx. 10 feet away.
4	Fleet Services	225	Motor Oil	Double-walled steel tank	Double-walled tank	2008	A release during tank filling or due to secondary containment failure would potentially flow floor drains in the garage.
				No piping	NA		
5	Fleet Services	550	Diesel	Single-walled steel tank	Fully-enclosed steel containment structure	1990	A release during tank filling or due to secondary containment failure would potentially flow across the paved area to a catch basin approx. 50 feet away.
				Single-walled steel piping	None		
6	Fleet Services	500	Used Oil	Double-walled steel tank	Double-walled tank	2008	A release during tank filling or due to secondary containment failure would potentially flow across the paved area to a catch basin approx. 100 feet away.
				Single-walled PVC piping	None		
7	Athletics	500	Used Oil	Double-walled steel tank	Double-walled tank	2008	A release during tank filling or due to secondary containment failure would potentially flow across the paved area to a catch basin approx. 100 feet away.
				No piping	NA		
8	Central Heating Plant	750 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1990	A release during tank filling or due to secondary containment failure would flow across the surrounding crushed stone.
				No piping	NA		
9	USB (Formerly IS)	500 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1995	A release during tank filling or due to secondary containment failure

Tank Identification Number	Location	Total Storage Capacity (gallons)	Contents	Material of Construction	Means of Secondary Containment	Year Installed	Predicted Flow Direction of Potential Release
				No piping	NA		would potentially flow across the paved area to a catch basin approx. 50 feet away.
10	Winston Hall	300 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1992	A release during tank filling or due to secondary containment failure would flow across the concrete pad within the shed and onto the crushed stone surrounding the shed.
				No piping	NA		
11	Reynolds Library	225 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1997	A release during tank filling would flow into the pit below containing the AST and potentially to the nearby storm drain. A release due to secondary containment failure would potentially flow to that same storm drain approx. 15 feet from the AST.
				Single-walled steel fill piping	None		
12	Calloway	380 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1990	A release during tank filling or due to secondary containment failure would potentially flow across the surrounding concrete and into the adjacent pit to a catch basin approx. 12 feet away.
				No piping	NA		
13	Reynolda Hall	300 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1982	A release during tank filling or due to secondary containment failure would flow over the surrounding soil. A release would be contained on 3 sides by a brick wall, but could potentially flow out the one open side to the loading dock and to a catch basin approx. 20 feet away.
				No piping	NA		

Tank Identification Number	Location	Total Storage Capacity (gallons)	Contents	Material of Construction	Means of Secondary Containment	Year Installed	Predicted Flow Direction of Potential Release
17	BB&T Field	1,244 (generator)	Diesel	Double-walled steel tank	Double-walled tank	2008	A release during tank filling or due to secondary containment failure would potentially flow down slope across the paved area to a catch basin approx. 60 feet away.
				No piping	NA		
18	BB&T Field	800 (generator)	Diesel	Double-walled steel tank	Double-walled tank	1997	A release during tank filling or due to secondary containment failure would potentially flow down slope across the paved area to a catch basin approx. 15 feet away.
				No piping	NA		
19	BB&T Field	80 (generator)	Diesel	Double-walled steel tank	Double-walled tank	2010	A release during tank filling or due to secondary containment failure would potentially flow into surrounding gravel and grass.
				No piping	NA		

Table 3-2: Hydraulic Elevators

Campus Location	Oil Storage Capacity (gal)	Predicted Flow Direction of Potential Release
Olin	150	Release would fill room and flow into adjacent room.
Benson – Lobby Side	150	Release would fill room and flow into adjacent hallway.
Benson – Food Court	150	Release would fill room and flow into adjacent hallway.
Wingate	150	Release would be contained within the room – recessed concrete floor.
Tribble-B Wing	190	Release would fill room and flow into adjacent hallway.
Tribble-C Wing	190	Release would fill room and flow into adjacent hallway.
Babcock Residence A Wing	140	Release would be contained within the room – recessed concrete floor.
Babcock Residence B Wing	140	Release would be contained within the room – recessed concrete floor.
Luter Residence – A Side	100	Elevator reservoirs are in same room. Release would fill room and flow towards floor drain approx. 12 feet away in adjacent mechanical room.
Luter Residence – B Side	100	Elevator reservoirs are in same room. Release would fill room and flow towards floor drain approx. 12 feet away in adjacent mechanical room.
Collins Residence	80	Release would fill room and flow towards floor drain approx. 5 feet away in adjacent mechanical room.
Winston Hall – 032A	80	Release would fill room and flow into adjacent office.
Winston Hall – B08	110	Release would fill room and flow towards floor drain approx. 12 feet away in adjacent hallway.
Reynolds Library – Wilson Wing	150	Release would fill room and flow into adjacent room.
Reynolds Library – Reynolds Wing	200	Release would fill room and flow into adjacent hallway.
Calloway – Kirby Side	80	Release would fill room and flow towards floor drain approx. 15 feet away in adjacent room.
Calloway – Manchester Side	190	Release would fill room and flow into adjacent hallway.
Athletic Center	150	Release would fill room and flow into adjacent weight room.
Miller Center	140	Release would fill room and flow into adjacent hallway.
Polo Residence - A	150	Release would fill room and flow towards floor drain approx. 6 feet away in mechanical room.
Polo Residence- B	150	Release would fill room and flow towards floor drain approx. 6 feet away in mechanical room.

Campus Location	Oil Storage Capacity (gal)	Predicted Flow Direction of Potential Release
Zeno Martin Residence	150	Release would fill room and flow into adjacent hallway.
Worrell – 1	150	Release would fill room and flow towards floor drain just outside door in adjacent mechanical room.
Worrell – 2 Law Side	150	Release would fill room and flow towards floor drain just outside door in adjacent mechanical room.
Worrell – 3 Library Side	150	Release would fill room and flow towards floor drain approx. 20 feet away in adjacent mechanical room.
USB (formerly IS)	80	Release would fill room and flow into adjacent hallway.
Scales Fine Arts Center – Music Wing	200	Release would remain within the building. The nearby floor drain has been sealed.
Scales Fine Arts Center – Art Wing	225	Release would fill room and flow into adjacent hallway.
Greene	150	Release would fill room and flow into adjacent hallway.
South Residence Hall - 1	80	Release would fill room and flow into adjacent storage room.
South Residence Hall - 2	80	Release would fill room and flow into adjacent storage room.
Welcome Center	80	Release would fill room and flow into adjacent storage room.
Bridger Field House	150	Release would fill room and flow into adjacent storage room.

Table 3-3: Miscellaneous Hydraulic Equipment

Campus Location	Oil Storage Capacity (gal)	Equipment	Predicted Flow Direction of Potential Release
Scales Fine Arts Center	200	Stage equipment lift	Release would fill room and flow into adjacent room.
Facilities Coal Yard	76	Trash compactor	Release would flow across surrounding soil.

Table 3-4: Oil-Filled Electrical Transformers

Transformer No.	Campus Location	Oil Storage Capacity (gal)	Predicted Flow Direction of Potential Release
T1	Central Heating Plant	266	Release would flow to adjacent gravel parking area.
T2	Facilities coal yard	219	Release would flow to adjacent gravel parking area.
T3	Anthropology Lab	169	Release would flow to surrounding soil and down an adjacent slope to a catch basin approx. 60 feet away.
T4	Miller Center	407	Release would flow to surrounding grassy area and down slope to a catch basin approx. 25 feet away.
T5	WFDD	165	Release would flow to surrounding grassy area.
T6	Spry Soccer Stadium	345	Release would flow to surrounding grassy area and down slope to a wooded area.
T7	Kentner Stadium	190	Release would flow down a grassy slope to a catch basin approx. 25 feet away.
T8	Olin	302	Release would flow to surrounding soil and pavement.
T9	West Chiller	450	Release would flow to surrounding grassy area.
T10	USB (Formerly IS)	371	Release would flow to surrounding pavement.
T11	Worrell	574	Release would flow over surrounding crushed stone to a catch basin approx. 10 feet away.
T12	Polo Residence	367	Release would flow over surrounding crushed stone.
T13	F&CS by construction shop	165	Release would flow over surrounding paved area to a catch basin approx. 5 feet away.
T14	Bookstore Warehouse	189	Release would flow over surrounding paved area and down slope to a catch basin approx. 50 feet away.
T15	EHS Bldg	169	Release would flow over surrounding paved area to a catch basin approx. 8 feet away.
T16	Landscaping	61	Release would flow over surrounding paved area to a catch basin approx. 6 feet away.
T17	Zeno Martin	227	Release would flow over surrounding grassy area.
T18	Facilities	169	Release would flow over surrounding crushed stone.
T19	Townhouse Apts	60	Release would flow over surrounding grassy area.
T20	Student Apts A	109	Release would flow down grassy slope towards the building.

Transformer No.	Campus Location	Oil Storage Capacity (gal)	Predicted Flow Direction of Potential Release
T21	Student Apts B	109	Release would flow down grassy slope towards the building.
T22	Greene Hall	398	Release would flow over surrounding concrete to a catch basin approx. 1 foot away.
T23	Calloway	399	Release would flow over surrounding concrete to a catch basin approx. 1 foot away.
T24	North Chiller Plant	400	Release would flow over surrounding grassy area.
T25	Athletic Center (A)	175	Release would flow over surrounding grassy area.
T26	Athletic Center (B)	165	Release would flow over surrounding grassy area.
T27	Athletic Center (C)	266	Release would flow over surrounding paved area to a catch basin approx. 15 feet away.
T28	Scales Fine Arts (A)	314	Release would flow over surrounding grassy area and down slope to a creek approx. 20 feet away.
T29	Scales Fine Arts (B)	390	Release would flow over surrounding grassy area and down slope to a creek approx. 20 feet away.
T30	Golf Center	61	Release would flow over surrounding grassy area.
T31	South Chiller Plant	455	Release would flow over surrounding crushed stone.
T32	South Chiller Plant	511	Release would flow over surrounding crushed stone.
T33	South Residence Hall	175	Release would flow over surrounding grassy area.
T40	Welcome Center	266	Release would flow into surrounding grassy area.
T41	Palmer / Piccolo	266	Release would flow into surrounding grassy area.
T42	The SS Center	61	Release would flow over surrounding grassy area.
T34 and T35	BB&T – inside (A) and (B)	(2) x 100 = 200	Release would be contained within the recessed room.
T36	BB&T – by generators	370	Release would flow over surrounding paved area to a catch basin approx. 60 feet away.
T37 and T38	BB&T – Hillside (2)	(2) x 549 = 1098	Release would flow over surrounding grassy area.
T39	BB&T Scoreboard side	175	Release would flow over surrounding grassy area.

4. INSPECTION, TESTING, AND PREVENTIVE MAINTENANCE PROCEDURES

WFU implements a comprehensive inspection, testing, and preventive maintenance program for its oil storage tanks, containment structures, and associated appurtenances and equipment. This chapter describes these procedures and WFU's record keeping practices in accordance with 40 C.F.R. § 112.7(e); and 40 C.F.R. § 112.8(c).

4.1 GENERAL SPILL PREVENTION STRATEGY AND TRAINING

The primary method of spill management at WFU is spill prevention. This has been emphasized through the proper design of containment systems, personnel training, and regular inspections. All WFU personnel involved with the use, storage, or management of oil are trained to report oil releases immediately to ensure prompt corrective action. In addition, certain employees are trained to contain spills using appropriate methods and equipment (assuming containment can be completed without risk to human health) until emergency response personnel with specialized response training and equipment respond. For specific information concerning the Oil SPCC training program at WFU and the annual discharge prevention briefings, see Chapter 7. The designated person responsible for oil spill prevention at WFU is the Oil SPCC Coordinator, identified in Table 6-1.

In the event that visible leaks are detected, they are promptly stopped, and preventive maintenance is performed to ensure that the cause of the leak is addressed. If oil is released into a diked area surrounding a tank, the released oil is immediately removed and properly managed.

4.2 BULK OIL STORAGE TANK INSPECTION AND TESTING

As required by 40 C.F.R. § 112.8(c)(6), WFU combines visual inspection with another testing technique for each tank and container that has an oil storage capacity of 55-gallons or greater.² The following sections outline the specific inspection and integrity testing procedures for all oil tanks and containers at WFU.

The program consists of:

- **Monthly Visual Inspections** of all bulk storage tanks performed by WFU personnel;
- **Annual Visual Inspections** of the shop-fabricated ASTs by designated WFU personnel;
- **Formal External Inspections and Leak Tests** of certain shop-fabricated ASTs performed, as needed, by a qualified tank inspector;
- **Tank Integrity Tests** performed, as needed, by a qualified tank tester; and
- **Regular Testing of Devices** to ensure that equipment remain in good working order.

If the results of an inspection or test indicate evidence of leakage or significant deterioration of a tank or container, or improper operation of associated devices, WFU will remove the tank, container or device from service and either repair or replace it.

² Oil-filled electrical and operating equipment are not considered bulk storage containers for these purposes, and are therefore not typically subject to the inspection and testing requirements. However, because WFU has committed to meeting the qualified oil-filled operational equipment requirements, routine inspections are required, and are described in this chapter. 40 C.F.R. § 112.7(k).

The following sections provide the details of WFU's inspection and testing program.

4.3 INSPECTION AND TESTING OF SHOP-FABRICATED ASTS

The elements of WFU's AST inspection and testing program for shop-fabricated ASTs were developed in accordance with the Steel Tank Institute's (STI's) "Standard for the Inspection of Aboveground Storage Tanks," SP001, 4th Edition (July 2006).

4.3.1 Monthly and Annual Visual Inspections

Designated WFU personnel perform monthly and annual visual inspections of all ASTs and containers (and associated piping) that have oil storage capacities equal to or greater than 55 gallons in accordance with the STI SP001 standard. Tank equipment (i.e., gauges, valves, leak detection systems, alarm/warning systems) is inspected for evidence of maintenance deficiencies and periodically tested to ensure that it remains in good working order.

Monthly and annual inspections are performed by designated personnel who have been trained to perform the inspections per the STI SP001 standard. The Monthly AST Checklist and STI SP001 Annual Inspection Checklist are provided in Appendix D.

4.3.2 Formal AST External Inspections and Leak Testing

WFU's shop-fabricated AST systems are potentially subject to formal external inspection and leak testing requirements (as defined by the STI SP001 standard) according to the capacity of the tank, the means of secondary containment, and the presence of a continuous release detection method.³ Because each WFU AST (other than Tank # 1) has less than 5,000 gallons of capacity, has secondary containment, and is provided a continuous release detection method through visual observations, formal external inspections and leak testing by a qualified tank inspector are not required on a routine basis per STI standards. However, because Tank # 1 has a capacity of 15,000 gallons, STI SP001 requires that it undergo a formal external inspection by a certified tank inspector when the tank reaches 20 years of service, which will be in 2029.

4.3.3 Tank Integrity Tests

WFU will retain the services of a qualified tank testing contractor to perform a tank integrity test in accordance with the STI Standard SP001, API Standard 653, or other industry standard determined by the tank tester to be appropriate for the type of tank, under the following circumstances:

- Whenever material repairs or alterations are made to the tank;
- If evidence of a leak is detected;
- In the event of damage to the tank or containment structure; or
- If the results of a formal tank inspection reveals evidence of leakage or deterioration.

³ A continuous release detection method is defined under STI as a means of detecting a release of liquid through inherent design. It can be passive, such as visual detection, but must be designed in accordance with good engineering practice.

An affected tank will remain out of service until it is repaired and tested to confirm its integrity or it is otherwise replaced.

4.4 BURIED PIPING INSPECTION AND TESTING

If a section of buried piping is exposed, it must be carefully inspected for deterioration. Corrective action must be taken if piping is damaged or significantly corroded. Integrity and leak testing will be conducted of any buried piping at the time of installation, modification, construction, relocation, or replacement. See 40 C.F.R. §§ 112.8(d)(1) and (4).

4.5 REGULAR TESTING OF DEVICES

In addition to the frequent visual inspections, WFU will perform regular testing of devices for all equipment associated with oil storage. For example, high level alarms and product level gauges will be periodically tested and/or inspected in accordance with the manufacturer's instructions to ensure they are in working order.

4.6 OIL-FILLED TRANSFORMER INSPECTIONS

In accordance with 40 C.F.R. § 112.7(k)(2)(i), WFU staff inspect oil-filled electrical transformers on a monthly basis to ensure that the units are in good condition and not in danger of leaking. An inspection form for the transformers is provided in Appendix D. Inspection records are maintained in the EHS Office by the Oil SPCC Coordinator. Inspectors immediately notify the Oil SPCC Coordinator of any oil releases. If any problems or deficiencies are noted, they are either addressed by WFU staff or an appropriate vendor is immediately notified to conduct necessary inspections and/or repairs. Additional informal inspections are conducted by WFU staff when working in the vicinity of the transformers and compactor.

4.7 HYDRAULIC EQUIPMENT INSPECTIONS

In accordance with 40 C.F.R. § 112.7(k)(2)(i), WFU inspects the Coal Yard trash compactor, hydraulic elevators, and hydraulic lift on a monthly basis to ensure that the units are in good condition and the reservoirs are not in danger of leaking or leaking. Inspectors immediately notify the Oil SPCC Coordinator of any oil releases. If any problems or deficiencies are noted, they are either addressed by WFU staff or an appropriate vendor is immediately notified to conduct necessary inspections and/or repairs. Inspection records are maintained in the EHS Office by the Oil SPCC Coordinator. Additional informal inspections are conducted by WFU staff when working in the vicinity of the compactor, elevators, and lift. Inspection forms are provided in Appendix D.

4.8 PREVENTIVE MAINTENANCE PROCEDURES

WFU routinely inspects and replaces equipment as part of its preventive maintenance program. If an inspection shows that continuation of an operation or practice is likely to result in an imminent release, prompt action will be taken. Examples of imminent release indicators include, but are not limited to, leaking valves, and pumps; cracked or corroded containers; malfunctioning relief devices; and inadequate gauging. Tanks are fail-safe engineered to avoid spills, and overfill prevention equipment is regularly tested/inspected to ensure proper operation.

If an inspection shows that an operation or practice is not an imminent threat to cause a release, but is malfunctioning and could lead to a release if not remedied, appropriate repairs/actions are completed as soon as practicable. Visible leaks are promptly corrected. Examples of probable release causes include, but are not limited to, damaged secondary containment structures and external coating deficiencies.

4.9 RECORDKEEPING PROCEDURES

WFU maintains signed records of inspections and tests that it performs in accordance with the written procedures described in this chapter. These records are kept with the Oil SPCC Plan in the EH&S Office. All Oil SPCC records are kept for a minimum of three years. See 40 C.F.R. § 112.7(e).

4.10 GASOLINE UST INSPECTIONS

Although the gasoline UST is not subject to Oil SPCC regulations, it is subject to the federal and State UST regulations. Accordingly, the gasoline UST's leak detection system is inspected monthly and documentation of the inspections is maintained by the EH&S Office for at least one year. See 40 C.F.R. §§ 280.41(a) and 280.45 and 15A NCAC 02N.0502 and .0506.

5. DISCHARGE DETECTION

This chapter describes WFU's discharge detection methods and equipment and meets the discharge discovery requirements of 40 C.F.R. § 112.7(a)(3)(iv). Employees working in areas where oil is stored visually observe their work areas during regular operating hours. All releases of oil are immediately addressed. Oil release indicators and equipment that may detect oil releases are described below.

5.1 OIL RELEASE INDICATORS

Oil releases can be detected in a variety of ways. Examples of oil release indicators include the presence of free product (i.e., oil) or vapors in:

- Soils or paved surfaces;
- Secondary containment structures;
- Transformer pads;
- Elevator rooms;
- Sewer and utility lines; and/or
- Nearby surface water.

Additional oil release indicators may include other visual observations, petroleum odors, unusual tank system or equipment operating conditions, erratic behavior of product dispensing equipment, sudden loss of product, or unexplained water in the tank.

5.2 DETECTING RELEASES

5.2.1 Underground Storage Tank

UST # 3 is equipped with electronic high level alarms that trigger audible alarms to prevent tank overfilling. The overfill alarm for UST # 3 also has a visual signal. UST # 3 is also equipped with electronic leak detection of its interstitial space. Oil transfers are carefully monitored by WFU staff and the carrier to prevent tank overfilling.

5.2.2 Aboveground Storage Tanks

Most ASTs at WFU are equipped with product level gauges to help prevent releases during tank filling. Some ASTs have high level vent whistles that signal the carrier to stop the transfer if an overfill is about to occur. Tank # 5 at Fleet Services does not have a product level gauge, but it is equipped with a vent whistle. The tank level is manually checked prior to each diesel delivery. WFU ensures that all vent whistles and product level gauges are kept in good working order. Because most fill ports are located directly on the tanks, the carrier can see the tank as it is being filled. WFU staff monitor product gauges during delivery to ASTs that have remote fill ports. Most of the double-walled ASTs have access ports to check for leaked oil in the interstitial spaces. Food Services Staff ensure that the waste cooking oil AST has sufficient capacity prior to adding oil to them. Potential releases from ASTs and associated piping can also be detected during informal inspections, formal monthly and annual inspections, and integrity tests (see Chapter 4).

5.2.3 Electrical and Operating Equipment

The oil-filled electrical transformers and Coal Yard trash compactor are inspected by WFU monthly. The hydraulic elevators and lift, including the oil storage reservoirs, are inspected quarterly by a vendor. WFU staff working in the vicinity of this equipment would also note and respond to any potential oil releases. Malfunctioning equipment is also likely to alert WFU staff of any oil releases in a fairly short time period.

6. OIL SPILL RESPONSE AND EQUIPMENT

This chapter identifies WFU's oil spill clean up equipment, describes oil spill response procedures, and identifies outside responders who may be contacted in the event of an oil release. This chapter also describes disposal procedures for material recovered from an oil release and provides contact information for potential responders. This chapter satisfies the requirements of 40 C.F.R. § 112.7(a)(3)(iv), (v), and (vi). General oil spill response procedures are provided in this chapter, followed by specific procedures organized by type of release.

6.1 OIL SPILL EQUIPMENT

All visible spills are immediately stopped and cleaned up using spill kits. An inventory of spill clean up materials available on campus is provided in Table 6-2. Spill kits are used only by trained personnel who are familiar with the hazards posed by the spilled material, and are knowledgeable of how to manage the spill clean up residue. Any employee who has basic oil spill response training may respond to small leaks or spills that do not pose significant risks to health or safety. The WFU Environmental, Health and Safety (EHS) Office should be called to handle larger spills. The contents of the spill kits are periodically inspected by the Oil SPCC Coordinator or designee to ensure that they are fully stocked and ready for use in the event of an oil spill. If, during an inspection, items are noted as missing from the spill kit, the missing contents are ordered and replaced within the kit as soon as reasonably possible.

6.2 OIL SPILL RESPONSE

As described above, WFU is equipped with strategically placed spill kits containing absorbent clean up materials that will generally be used to contain and clean up minor spills. Properly trained WFU staff may respond to oil releases using the spill response procedures outlined below.

For spills that are beyond the control of the WFU EHS Office and the standard clean up/control methods discussed in this chapter, the Oil SPCC Coordinator will contact the Fire Department and an emergency clean up contractor, if necessary. Regardless of the amount spilled, if an oil release reaches a stormwater catch basin or a surface water body, the Oil SPCC Coordinator will immediately contact the Fire Department. The Oil SPCC Coordinator and his/her Alternates are the primary responsible parties at WFU for the coordination of any oil response and clean up effort. They will draw upon the resources of the EHS Office, as necessary.

The Fire Department will usually be the first agency to respond to a release and is typically responsible for contacting other state or regional emergency response agencies in the unlikely event they are needed. After the initial response, the Fire Department may choose to turn over responsibility for the release clean up to WFU's private clean up contractor. The private clean up contractor has sufficient equipment and materials to handle any potential oil release at WFU, including absorbent materials, containers, earth moving equipment, and vacuum trucks. It is estimated that the largest potential release from a WFU oil storage facility would be 15,000 gallons, which is the capacity of the largest AST. There is the potential for a release to occur if an oil delivery vehicle were to be involved in an accident on WFU property. In the extremely unlikely event that the private spill contractor is unable to handle the release response, County and/or State emergency response agencies will be summoned. WFU has emergency mutual aid agreements in place with the Fire Department, Police Department, and a private spill contractor.

6.2.1 General Oil Spill Response Procedures

An oil spill could occur at WFU due to accidents during oil handling activities or tank/container/containment failure. In the event of a minor oil release, it is WFU's policy to place absorbent booms and/or drain covers/mats on all floor drains, catch basins, and any other drainage pathway to prevent oil dispersion and to limit the flow to the extent possible. The general oil spill response procedures outlined in Figure 6-1 should be followed for all oil spills. Additional spill response procedures are detailed in WFU's Chemical Emergency Response Plan.

6.2.2 Response to Oil Releases from Specific Sources

Tank Overfill During Delivery

Oil deliveries are always monitored by the carrier and by WFU staff to limit the potential for overfills. However, if oil delivery equipment fails or an overfill occurs for some other reason, the carrier will immediately take steps to stop the oil delivery process. The carrier and WFU staff will deploy oil containment barriers (i.e., boom) and absorbent material to stop the spread of the spill. It is WFU policy that any nearby stormwater catch basins are protected with covers or absorbent booms during tank filling operations. Once the spill has been contained, the released oil is cleaned up according to the procedures outlined in Figure 6-1.

Tank/Container Failure

If there is visual evidence of an AST, UST, or oil container failure which results in a minor spill, absorbent materials will be used to contain and clean up the spill. The container or tank and associated piping and equipment will be inspected to identify the origin of the release. If oil was released due to faulty equipment or broken piping, WFU will immediately take the equipment out of service and correct the problem. If it is determined that a tank leaked, the Oil SPCC Coordinator will immediately contact an emergency contractor to pump out the tank, which will remain empty and out-of-service until it is repaired or replaced.

Equipment Failure

If it appears that an oil-filled transformer or hydraulic elevator, compactor or lift reservoir is leaking, the released oil will be immediately contained and cleaned up. The appropriate contractor will be called to service the faulty equipment. Precautions will be taken to restrict unauthorized individuals from all sites that pose potential safety risks.

Vehicle Accidents

In the event of a vehicle accident in which a minor spill of oil occurs, absorbent materials will be used immediately to contain and clean up the spill. Absorbent booms will be placed around catch basins and other drainage pathways to prevent oil dispersion.

6.3 OIL SPCC COORDINATOR RESPONSIBILITIES

The person who will most likely coordinate an oil release response at WFU will be the Oil SPCC Coordinator, identified in Table 6-1. The general responsibilities of the Oil SPCC Coordinator include:

- Oversee the development, implementation, and maintenance of the Oil SPCC Plan and oil spill prevention program;

- Serve as the designated person responsible for oil spill prevention;
- Identify any facility changes that would warrant amendments to the Oil SPCC Plan;
- Coordinate, organize and/or conduct Oil SPCC training and annual spill prevention briefings for oil-handling personnel;
- Maintain the first-aid stations, fire extinguishers, and spill containment equipment and supply areas at the designated locations; and
- In the event of a spill, contact the Fire Department and/or spill contractor.

The responsibilities of the Oil SPCC Coordinator during oil spill emergencies include:

- Assess the type, magnitude, and extent of the spill;
- Contact the EHS Office to bring spill containment equipment to the spill location;
- Work with the EHS Office during spill cleanup;
- Contact and coordinate with local off-site facility responders (i.e., fire, police, clean up contractors listed in Table 6-1), if necessary;
- Arrange transportation via ambulance for off-scene medical services, if necessary;
- Arrange for the clean up and proper disposal of any released oil; and
- Report any spill of a reportable quantity to appropriate authorities (See Chapter 9).

6.4 ALTERNATE OIL SPCC COORDINATOR RESPONSIBILITIES

In the event that the Oil SPCC Coordinator is not available to coordinate an oil release response, WFU has appointed alternate Oil SPCC Coordinators, identified in Table 6-1. The role of the Alternate Oil SPCC Coordinator is: (1) to act as Oil SPCC Coordinator whenever the primary Coordinator is unable to perform his/her duties, or (2) to assist the Oil SPCC Coordinator in the event of an actual spill or release event.

The Alternate Oil SPCC Coordinators are familiar with the role and responsibilities of the Oil SPCC Coordinator as listed above, in the event that he/she is called upon to fill this role during an actual spill emergency. The Oil SPCC Coordinator may delegate any of the responsibilities listed above to an Alternate Coordinator.

The Oil SPCC Coordinator and the Alternate Oil SPCC Coordinators periodically review the Oil SPCC Plan and understand their assigned responsibilities. The Coordinators are familiar with the preventative inspection and testing provisions of the Oil SPCC Plan, and are prepared to implement the emergency response provisions of the Plan in the event of an oil release.

6.5 DISPOSAL PROCEDURES

The recovery of spilled oil and the removal of contaminated debris is facilitated by an incident follow-up investigation team comprised of the Oil SPCC Coordinator and other employees involved with the incident. The Oil SPCC Coordinator will determine what, if any, outside assistance is needed, identify applicable federal, state, and local regulatory requirements, and then select one or more of the following waste cleanup/management options:

1. Product Recovery - Whenever feasible, spilled and contained oil will be returned to its original container or process of origin. The Oil SPCC Coordinator will ensure all leaks and punctures are repaired first.
2. Off-Site Disposal – Spill materials that cannot be reused will be collected, containerized, characterized, transported, and disposed at an appropriately licensed off-site facility.

Selected cleanup and disposal options will comply with all applicable federal, state, and local laws and rules. Waste oil and decontamination wastes such as gloves, protective clothing, and absorbent material will be classified as either hazardous or non-hazardous waste and appropriately managed according to applicable local, state, and federal regulations.

6.6 SPILL REPORT FORM

WFU will document any oil releases on the Spill Report Form in Figure 6-2 and the completed forms will be maintained by the EHS Department.

Table 6-1: WFU Oil Spill Emergency Call List

WFU Phone Numbers	
WFU EH&S Office Phone Number	336-758-7189
WFU University Police	911 or 336-758-5911
Steve Fisenne, Oil SPCC Coordinator	Office: 336-758-3089 Home: 704-540-8881 Cell: 336-830-9394
Michelle Lennon, Alternate Oil SPCC Coordinator	Office: 336-758-5385 Home: 336-784-1798 Cell: 336-480-8480
Scott Frazier, Alternate Oil SPCC Coordinator	Office: 336-758-4329 Home: 336-945-9184 Cell: 336-782-6107
James Alty, Assoc. VP for Facilities & Campus Services	Office: 336-758-4623 Cell: 336-972-7457
Hof Milam, Senior Vice President/CFO	Office: 336-758-7415
Police	
Winston-Salem Police Department	911 or 336-773-7700
Forsyth County Sheriff	911 or 336-917-7001
Fire/Rescue	
Winston-Salem Fire Department	911 or 336-773-7900
Wake Forest University Baptist Medical Center	336-716-2255
Environmental Emergencies	
National Response Center/EPA Spill Hotline	800-424-8802
NC DENR (Winston-Salem)	336-771-5000 336-771-4630 (fax)
Winston-Salem Sewer Authority	336-765-0130
NC Emergency Management (Raleigh)	800-858-0368
Forsyth County Emergency Management	336-727-2200
CHEMTREC	800-424-9300
Private Spill Response Contractors	
Shamrock Environmental	800-881-1098
A&D Environmental Services	336-434-7750

Table 6-2: Spill Response Equipment


Item	Use	Location
Bulk containers of spill pillows, vermiculite, and booms.	Used for absorbing and stopping flow of chemical and/or petroleum release.	Coal Yard Storage Pad
Hand tools including non-sparking shovels, squeegees, drum uprighter and drum plug kit	Used for collection of absorbents/booms and chemical spills, up-righting tipped containers, and sealing containers that have small puncture holes.	Coal Yard Storage Pad
Portable spill response kit containing small quantities of vermiculite, spill pillows, drain stopper, tape, absorbent booms and towels for small spills.	For initial response to stop progression of spills and clean up of smaller quantity spills.	EHS Trailer and Coal Yard Storage Pad
Respirator cartridges (combination) and respirator masks.	For use by trained responders in potentially hazardous atmosphere.	EHS Office
Air Sampling Meters	Check Oxygen, LEL, VOC, H2S and CO levels to ensure safe working atmosphere.	EHS Office
Level C and B suits, full-face supplied air respirators, supplied air tanks, and PPE gloves and boots.	For personal protection during emergency response and clean up to reduce chance of chemical exposure due to skin contact. Supplied air respirators for use by trained personnel in hazardous atmosphere to prevent inhalation of airborne chemicals and in low oxygen environment.	EHS Trailer and EHS Office and Coal Yard Storage Pad
Spill kits for minor spills are located in individual buildings where hazardous waste is generated and oil is stored.	For absorption of chemicals from small quantity spills.	Olin, Salem, Winston, University Police, Central Heating Plant, Coal Yard Storage Pad, EHS Trailer and all four Chiller Plants (North, South, West and Worrell)

Figure 6-1: General Oil Spill Response Procedures

The following basic spill response procedures should be followed for all oil spills (some activities occur simultaneously):

- Report incident to the Oil SPCC Coordinator, Steve Fisenne at 758-3089.
- The Oil SPCC Coordinator will gather all relevant information and summon outside assistance as necessary.
- The Oil SPCC Coordinator will also determine if a reportable release has occurred, and facilitate reporting as required by state or federal law. (See Chapter 9)
- If the oil clean up will be conducted by WFU personnel, the following general procedures should be followed:
 - Eliminate ignition sources that may be present.
 - Avoid contact with spilled product.
 - Stop the source of the release if it is safe to do so.
 - Contain the released oil with absorbent materials.
 - Prevent released material from entering sewers, water bodies, drains, and confined spaces.
 - Restrict access to impacted and potentially threatened areas.
 - Keep unprotected personnel upwind of spill area.
 - If spill occurs on an unpaved area, remove and dispose of all contaminated soil in accordance with applicable rules.
 - Choose clean-up equipment, where possible, that will not be corroded or otherwise damaged by the spilled product. Use explosion-proof and spark-proof equipment, where necessary.
 - Ensure recovered spill material is collected, containerized, labeled, properly characterized, and disposed of in accordance with all applicable requirements.

Figure 6-2: Spill Report Form

Person Reporting:		Phone Number:
Date of Incident:	Time of Incident: AM PM	Quantity Spilled
Quantity Contained or Recovered	Method of Disposal of Recovered Material	
Location of Spill	Type of Material Spilled	
Source of Spill (Pipe, 55-Gallon drum, Equipment, etc.)		
Cause of Spill or Factors Contributing to Release <input type="checkbox"/> Equipment Failure <input type="checkbox"/> Training Deficiencies <input type="checkbox"/> Operator Error <input type="checkbox"/> Weather Conditions <input type="checkbox"/> Faulty Process Design <input type="checkbox"/> Other _____		
Immediate Actions Taken <input type="checkbox"/> Containment <input type="checkbox"/> Neutralization <input type="checkbox"/> Dilution <input type="checkbox"/> System Shut Down <input type="checkbox"/> Evacuation <input type="checkbox"/> Other _____		
Surface Area Affected (square feet, inside and/or outside)		
Any Release to the Environment? <input type="checkbox"/> Yes <input type="checkbox"/> No	Area(s) affected (soil, water, air)	
Notification of Emergency Responders (Fire Department, NC Emergency Management, NCDENR, etc): Agency: Agency: Phone Number: Phone Number: Actions Taken: Actions Taken:		
Clean-up Closure Actions (Monitoring, Soil Testing/Remediation, etc.)		
List Any Injuries Related to Spill		
List Names of People Involved in Spill		
Comments: <div style="text-align: right;">  Return to: adkinsmm@wfu.edu 336•758•5385 fisennsw@wfu.edu 336•758•3089 </div>		

7. EMPLOYEE TRAINING PROGRAMS

This chapter describes the Oil SPCC Training and Annual Discharge Prevention Briefings that WFU provides to its oil-handling employees, as required by 40 C.F.R. § 112.7(f).

7.1 OIL SPCC TRAINING

WFU provides Oil SPCC training to all oil-handling employees and those who play a role in the implementation of this Plan. WFU's Oil SPCC training program instructs employees involved with the handling of oil and/or oil containment devices, structures, and equipment on:

1. Contents of WFU's Oil SPCC Plan;
2. The proper operation and maintenance of equipment to prevent discharges and general facility operations;
3. Oil discharge procedures, including notification and use of available spill equipment;
4. Instructions regarding applicable oil pollution control laws, rules, and regulations; and
5. Instructions regarding tank inspection procedures (designated employees only).

Oil SPCC training is provided to all new oil-handling employees. Oil SPCC training records are maintained with this Plan by the Oil SPCC Coordinator.

7.2 DISCHARGE PREVENTION BRIEFINGS

Annual discharge prevention briefings are conducted for oil-handling personnel, and cover the following topics:

1. *Oil SPCC Plan Update* – discuss any Plan changes to ensure that oil-handling employees retain an adequate understanding of the Oil SPCC operations.
2. *Discharges* – highlight and describe discharges that have occurred in the past year; discuss response actions; effectiveness of oil spill response equipment; describe actions taken to prevent recurrence.
3. *Failures and Malfunctioning Components* – discuss any known equipment failures or malfunctioning components related to oil storage.
4. *Precautionary Measures* – brainstorm current or new precautionary measures to prevent oil releases.

Records of Annual Discharge Prevention Briefings are maintained with this Plan by the Oil SPCC Coordinator.

8. SECURITY

This chapter describes the routine and emergency security measures that WFU implements for the campus and oil storage locations. This chapter meets the requirements of 40 C.F.R. § 112.7(g).

8.1 ROUTINE SECURITY MEASURES

Because WFU is a public college, access to the campus is unrestricted. However, University Police are on duty and patrol the grounds seven days per week, 24 hours per day. In addition, WFU attempts to provide adequate lighting in all areas of the campus for safety purposes. This lighting also facilitates the discovery of potential visible oil spills and discourages vandalism. Because of the size of the WFU property and the number of individual oil storage facilities, it is not feasible to provide fencing for security. Equivalent environmental protection is afforded through the routine security measures in place.

8.2 SECURITY DURING EMERGENCIES

During an emergency, all facility access would be controlled, and only emergency response and other authorized responders (e.g., municipal responders, approved contractors, and regulatory authorities) would be allowed access to the affected areas of the campus. Communication during a large-scale emergency would be controlled through Campus Police Dispatch located in Davis Dormitory. WFU has multiple means of communication available to coordinate an emergency including hand-held radios, cell phones, pagers, telephones, fax machines, and e-mail. Emergency procedures are detailed in WFU's comprehensive Chemical Emergency Response Plan. The Oil SPCC Coordinator will be the primary liaison with emergency response agencies.

Upon notification that an oil release has occurred, the Oil SPCC Coordinator will designate certain employees to assist with the release perimeter security while the incident is assessed. Designated employees will immediately restrict facility access to only essential emergency response personnel. Affected campus entry points will be secured immediately, if not already secured. These steps will facilitate an organized and efficient response to an oil release.

8.3 SECURITY FOR OIL STORAGE FACILITIES

The pumps for the diesel and gasoline ASTs are activated with fuel keys that are issued only to authorized personnel. Most generator tank fill ports are located in locked generator cases. In addition, tank fill ports are capped when tanks are not being filled. Transformer cases are locked, and hydraulic elevator reservoirs are located in locked rooms. Flow and drain valves that directly discharge out are locked in closed position when not operational. Oil pump starter controls are locked in "off" position or only accessible to authorized personnel when not in use. The CHP is staffed 24 hours per day and personnel routinely monitor oil storage facilities located there.

9. OIL SPILL NOTIFICATION PROCEDURES

This chapter describes how WFU notifies federal, state, and local agencies regarding reportable releases at or from WFU, and satisfies the requirements of 40 C.F.R. § 112.7(a)(3)(vi) and (a)(4). The Oil SPCC Coordinator, or his/her designee, is responsible for reporting oil releases to DENR and/or EPA, as required.

9.1 IMMEDIATE ORAL NOTIFICATIONS FOR OIL SPILLS

The Oil SPCC Coordinator or Alternate Oil SPCC Coordinator is notified upon discovery of oil spills/releases and is responsible for ensuring all required notifications are made to regulatory agencies. Prior to making any oral or written notifications to regulatory agencies, the Oil SPCC Coordinator must first notify WFU's Associate Vice President for Facilities & Campus Services and in that person's absence, the Vice President for Administration. (See Table 6-1 for contact information.)

9.1.1 Oil Releases to Water

If oil is discharged⁴ to water, the Oil SPCC Coordinator or his/her designee will report the incident within 24 hours to:

1. DENR: 336-771-5000
or NC Emergency Management if after normal business hours, at 800-858-0368.
2. National Response Center ("NRC"): 800-424-8802

The NRC Operator will notify, as appropriate, the U.S. Coast Guard and/or EPA, Region 4.

The following information must be provided to the NRC when reporting oil discharges to water:

- Exact address or location and phone number of the facility;
- Date and time of the discharge and the type of material discharged;
- Estimates of the total quantity discharged;
- Source of the discharge;
- Description of all affected media;
- Cause of the discharge;
- Any damages or injuries caused by the discharge;
- Actions being used to stop, remove, and mitigate the effects of the discharge;
- Whether an evacuation may be needed; and
- Names of individuals and/or organizations who have also been contacted.

⁴ For the purposes of this notification, "discharge" refers to the definition as found in 40 C.F.R. Part 110, which is a *harmful quantity* of spilled oil which results in:

- 1) Violation of applicable water-quality standards;
- 2) Production of a film, sheen or discoloration on the water surface or adjoining shoreline; or
- 3) Deposition of a sludge or emulsion beneath the water surface or upon the adjoining shoreline.

9.1.2 Oil Release to Land

The following oil spills to land must be reported to DENR at 336-771-5000 within 24 hours:

- Any spill \geq 25 gallons;
- Any spill regardless of amount that occurs within 100 feet of surface waters; or
- Any oil spill $<$ 25 gallons that cannot be cleaned up within 24 hours.

After hours reporting should be made to NC Emergency Management, at 800-858-0368.

9.1.3 Oil Releases to the Public Sewer

If WFU has reason to believe that an oil release has entered the public sewer system, notification should immediately be made to the Winston-Salem Sewer Authority at 336-765-0130.

9.2 WRITTEN NOTIFICATION FOR OIL SPILLS

Written notification to EPA Region 4 is required if either of the following criteria is met:

1. A single discharge of oil exceeds 1,000 gallons; or
2. The facility has discharged more than 42 gallons of oil twice within a twelve month period.

40 C.F.R. § 112.4(a).

If one of these criteria is met, WFU will submit the following written information to EPA Region 4 within 60 days:

- Name of the facility
- Name of facility owner/operator;
- Location of the facility;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Corrective action and countermeasures the facility has taken, including a description of equipment repairs and replacements;
- An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- The cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- Additional preventive measures the facility has taken or contemplated to minimize the possibility of recurrence; and
- Other information pertinent to the discharge that EPA Region 4 may deem necessary.

WFU will amend this Oil SPCC Plan if amendments are necessary as a result of the discharge(s). In addition, WFU will send a duplicate of the above information to oil pollution control personnel at NC DENR, if required by EPA. See 40 C.F.R. § 112.4(a).

9.3 SPILLS OR OVERFILLS FROM UST

WFU's gasoline UST is not subject to the Oil SPCC regulations, and therefore not subject to the release reporting outlined in Section 9.2 above. However, the UST is subject to the release reporting described in Section 9.1 and below.

9.3.1 Suspected UST Release

Within 24 hours, the following must be reported to DENR at 336-771-5000:

- The discovery of released regulated substance at the UST site or surrounding area;
- Unusual tank system operating conditions unless the equipment is found to be defective, but not leaking and is immediately repaired or replaced;
- Release detection monitoring results that indicate a release may have occurred, unless:
 - The monitoring device is found to be defective, is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm initial result; or
 - In the case of inventory control, a second month of data does not confirm the initial result.

See 40 C.F.R. § 280.50 and 15A NCAC 02N.0604.

Except as noted above, no written report is required for an oil spill generally. However, the agencies notified of the spill may request a written follow-up report of the incident. For spills determined not to be reportable, WFU will maintain a record of the incident.

APPENDIX A: ACRONYMS

ACRONYMS

AST - Aboveground Storage Tank
API - American Petroleum Institute
C.F.R. - Code of Federal Regulations
CHP – Central Heating Plant
DENR – North Carolina Department of Natural Resources
DOT - Department of Transportation
EPA - Environmental Protection Agency
NFPA - National Fire Protection Association
Oil SPCC - Oil Spill Prevention Control and Countermeasure
OSHA - Occupational Safety and Health Administration
P.E. - Licensed Professional Engineer
PPE - Personal Protective Equipment
STI - Steel Tank Institute
UST – Underground Storage Tank
WFU – Wake Forest University
WWTF – Wastewater Treatment Facility

APPENDIX B: FACILITY DIAGRAMS

APPENDIX C: APPLICABILITY OF SUBSTANTIAL HARM CRITERIA CHECKLIST AND CERTIFICATION

APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA CHECKLIST

FACILITY NAME: WAKE FOREST UNIVERSITY

FACILITY ADDRESS: 1834 WAKE FOREST ROAD, WINSTON-SALEM, NORTH CAROLINA

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons? Yes: _____ No: X
2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area? Yes: _____ No: X
3. Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance such that a discharge from the facility could cause injury to fish, wildlife, and sensitive environments? Yes: _____ No: X
4. Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake? Yes: _____ No: X
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last five years? Yes: _____ No: X

CERTIFICATION OF APPLICABILITY OF SUBSTANTIAL HARM

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

James Alty, Associate Vice President for Facilities and Campus Services

Date _____

APPENDIX D: MONTHLY AND ANNUAL AST AND EQUIPMENT INSPECTION CHECKLISTS

Insert WFU Inspection Sheets (hardcopies):

- Monthly Hydraulic Unit Inspection Checklist
- Monthly Elevator Inspection Checklist
- Monthly Transformer Checklist
- Monthly AST Inspection Checklist

Monthly Hydraulic Unit Checklist								
Index	Equipment Location	Equipment ID	Is there visible leakage? Yes	Is there visible leakage? No	Comment	Condition Satisfactory? Yes	Condition Satisfactory? No	Comment
1549	Facilities Coal Yard	Trash compactor						
1550	Scales Arts Center	Stage equipment lift						

Description	Model Number	Model Name	Serial Number	Internal Number	Purchase Date	Service End Date	Max Capacity	Special Comments
Facilities Coal Yard							76	Release would flow across surrounding soil.
Scales Fine Arts Center							200	Release would fill room and flow into adjacent room.

Hydraulic Elevator Inspection														
Index	Equipment Location	Equipment ID	Visible Leakage Yes	Visible Leakage No	Comment	WO#	Comment	Condition	Condition Satisfactory	Condition Unsatisfactory	Comment	Description	Max Capacity	Special Comments
2785	Athletic Center	Athletic Center Elevator										Athletic Center Elevator	150	Release would fill room and flow into adjacent weight room.
2786	Babcock Residence A	Babcock Residence A Wing Elevator										Babcock Residence A Wing Elevator	140	Release would be contained within the room – recessed concrete floor.
2787	Babcock Residence B	Babcock Residence B Wing Elevator										Babcock Residence B Wing Elevator	140	Release would be contained within the room – recessed concrete floor.
2788	Benson	Benson - Food Court Elevator										Benson - Food Court Elevator	150	Release would fill room and flow into adjacent hallway.
2789	Benson	Benson - Lobby Side Elevator										Benson - Lobby Side Elevator	150	Release would fill room and flow into adjacent hallway.
2790	Bridge Field House	Bridge Field House Elevator										Bridge Field House Elevator	150	Release would fill room and flow into adjacent storage room.
2791	Calloway	Calloway - Calloway Side Elevator										Calloway - Calloway Side Elevator	190	Release would fill room and flow into adjacent hallway.
2792	Calloway	Calloway - Kirby Side Elevator										Calloway - Kirby Side Elevator	80	Release would fill room and flow towards floor drain approx. 15 feet away in adjacent room.
2793	Collins Residence	Collins Residence Elevator										Collins Residence Elevator	80	Release would fill room and flow towards floor drain approx. 5 feet away in adjacent mechanical room.
2794	Greene Hall	Greene Elevator										Greene Elevator	150	Release would fill room and flow into adjacent hallway.
2795	Luter Residence	Luter Residence - A Side Elevator										Luter Residence - A Side Elevator	100	2 elevator reservoirs in same room. Release would fill room/flow towards floor drain approx. 12 ft aw.
2796	Luter Residence	Luter Residence - B Side Elevator										Luter Residence - B Side Elevator	100	2 elevator reservoirs in same room. Release would fill room/flow towards floor drain approx. 12 ft aw.
2797	Miller Center	Miller Center Elevator										Miller Center Elevator	140	Release would fill room and flow into adjacent hallway.
2798	Olin	Olin Elevator										Olin Elevator	150	Release would fill room and flow into adjacent room.
2799	Polo Residence	Polo A Residence Elevator										Polo A Residence Elevator	150	Release would fill room and flow towards floor drain approx. 6 feet away in mechanical room.
2800	Polo Residence	Polo B Residence Elevator										Polo B Residence Elevator	150	Release would fill room and flow towards floor drain approx. 6 feet away in mechanical room.
2801	Reynolds Library - W	Reynolds Library – Reynolds Wing Elevator										Reynolds Library – Reynolds Wing Elevator	200	Release would fill room and flow into adjacent hallway.
2802	Reynolds Library - W	Reynolds Library – Wilson Wing Elevator										Reynolds Library – Wilson Wing Elevator	150	Release would fill room and flow into adjacent room.
2803	Scales	Scales Fine Arts Center - Art Wing Elevator										Scales Fine Arts Center - Art Wing Elevator	225	Release would fill room and flow into adjacent hallway.
2804	Scales	Scales Fine Arts Center - Music Wing Elevator										Scales Fine Arts Center - Music Wing Elevator	200	Release would remain within the building. The nearby floor drain has been sealed.
2805	South Residence Hall	South Residence Hall 1 Elevator										South Residence Hall 1 Elevator	80	Release would fill room and flow into adjacent storage room.
2806	South Residence Hall	South Residence Hall 2 Elevator										South Residence Hall 2 Elevator	80	Release would fill room and flow into adjacent storage room.
2807	Tribble	Tribble - B Wing Elevator										Tribble - B Wing Elevator	190	Release would fill room and flow into adjacent hallway.
2808	Tribble	Tribble - C Wing Elevator										Tribble - C Wing Elevator	190	Release would fill room and flow into adjacent hallway.
2809	USB	USB Elevator										USB Elevator	80	Release would fill room and flow into adjacent hallway.
2810	Welcome Center	Welcome Center Elevator										Welcome Center Elevator	80	Release would fill room and flow into adjacent storage room.
2811	Wingate	Wingate Elevator										Wingate Elevator	150	Release would be contained within the room – recessed concrete floor.
2812	Winston Hall	Winston Hall - Room 030A Elevator										Winston Hall - Room 030A Elevator	80	Release would fill room and flow into adjacent office.
2813	Winston Hall	Winston Hall - Room B08 Elevator										Winston Hall - Room B08 Elevator	110	Release would fill room and flow towards floor drain approx. 12 feet away in adjacent hallway.
2814	Worrell	Worrell - Law Side #2 Elevator										Worrell - Law Side #2 Elevator	150	2 elevator reservoirs in same room. Release would fill room/flow towards floor drain just outside do.
2815	Worrell	Worrell - Law Side #3 Elevator										Worrell - Law Side #3 Elevator	150	2 elevator reservoirs in same room. Release would fill room/flow towards floor drain just outside do.
2816	Worrell	Worrell Elevator										Worrell Elevator	150	Release would fill room and flow towards floor drain approx. 20 feet away in adjacent mechanical room.
2817	Zeno Martin Residence	Zeno Martin Residence Elevator										Zeno Martin Residence Elevator	150	Release would fill room and flow into adjacent hallway.



Transformer Inspection											
Index	Equipment Location	Equipment ID	Is there visible leakage? Yes	Is there visible leakage? No	Comment	Is the condition of the transformer satisfactory? Yes	Is the condition of the transformer satisfactory? No	Comment	Description	Max Capacity	Special Comments
2765	Anthropology Lab	Transformer 03							Transformer 03	169	Release would flow to surrounding soil and down an adjacent slope to a catch basin approx. 60 feet a
2760	Athletic Center	Transformer 25							Transformer 25	175	Release would flow over surrounding grassy area.
2761	Athletic Center	Transformer 26							Transformer 26	165	Release would flow over surrounding grassy area.
2762	Athletic Center	Transformer 27							Transformer 27	266	Release would flow over surrounding paved area to a catch basin approx. 15 feet away.
2770	BB&T Field	Transformer 34							Transformer 34	100	Release would be contained within the recessed room.
2771	BB&T Field	Transformer 35							Transformer 35	100	Release would be contained within the recessed room.
2772	BB&T Field	Transformer 36							Transformer 36	370	Release would flow over surrounding paved area to a catch basin approx. 60 feet away.
2773	BB&T Field	Transformer 37							Transformer 37	549	Release would flow over surrounding grassy area.
2774	BB&T Field	Transformer 38							Transformer 38	549	Release would flow over surrounding grassy area.
2775	BB&T Field	Transformer 39							Transformer 39	175	Release would flow over surrounding grassy area.
2748	Bookstore Warehouse	Transformer 14							Transformer 14	189	Release would flow over surrounding paved area and down slope to a catch basin approx. 50 feet away.
2758	Calloway	Transformer 23							Transformer 23	399	Release would flow over surrounding concrete to a catch basin approx. 1 foot away.
2743	Central Heating Plant	Transformer 01							Transformer 01	266	Release would flow to adjacent gravel parking area.
2747	Facilities	Transformer 13							Transformer 13	165	Release would flow over surrounding paved area to a catch basin approx. 5 feet away.
2752	Facilities	Transformer 18							Transformer 18	169	Release would flow over surrounding crushed stone.
2754	Facilities Coal Yard	Transformer 02							Transformer 02	219	Release would flow to adjacent gravel parking area.
2766	Golf Center	Transformer 30							Transformer 30	61	Release would flow over surrounding grassy area.
2757	Greene	Transformer 22							Transformer 22	398	Release would flow over surrounding concrete to a catch basin approx. 1 foot away.
2781	Kentner Stadium	Transformer 07							Transformer 07	190	Release would flow down a grassy slope to a catch basin approx. 25 feet away.
2750	Landscaping	Transformer 16							Transformer 16	61	Release would flow over surrounding paved area to a catch basin approx. 6 feet away.
2776	Miller Center	Transformer 04							Transformer 04	407	Release would flow to surrounding grassy area and down slope to a catch basin approx. 25 feet away.
2759	North Chiller Plant	Transformer 24							Transformer 24	400	Release would flow over surrounding grassy area.
2782	Olin	Transformer 08							Transformer 08	302	Release would flow to surrounding soil and pavement.
2749	OS-1 Building	Transformer 15							Transformer 15	169	Release would flow over surrounding paved area to a catch basin approx. 8 feet away.
2778	Palmer / Piccolo	Transformer 41							Transformer 41	266	Release would flow into surrounding grassy area.
2746	Polo Residence	Transformer 12							Transformer 12	367	Release would flow over surrounding crushed stone.
2763	Scales Fine Arts Cen	Transformer 28							Transformer 28	314	Release would flow over surrounding grassy area and down slope to a creek approx. 20 feet away.
2764	Scales Fine Arts Cen	Transformer 29							Transformer 29	390	Release would flow over surrounding grassy area and down slope to a creek approx. 20 feet away.
2767	South Chiller Plant	Transformer 31							Transformer 31	455	Release would flow over surrounding crushed stone.
2768	South Chiller Plant	Transformer 32							Transformer 32	511	Release would flow over surrounding crushed stone.
2769	South Residence	Transformer 33							Transformer 33	111	Release would flow over surrounding grassy area.
2780	Spry Soccer Stadium	Transformer 06							Transformer 06	345	Release would flow to surrounding grassy area and down slope to a wooded area.
2755	Student Apartments A	Transformer 20							Transformer 20	109	Release would flow down



TANK DATA SUMMARY		Site Details		Comments		Date/Condition		Status		Inspection		Leakage		Capacity		Special Comments	
Item	Equipment ID	Site Name	Site Address	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition
200	2000000000	Wake Forest University	Wake Forest University														
201	2000000001	Wake Forest University	Wake Forest University														
202	2000000002	Wake Forest University	Wake Forest University														
203	2000000003	Wake Forest University	Wake Forest University														
204	2000000004	Wake Forest University	Wake Forest University														
205	2000000005	Wake Forest University	Wake Forest University														
206	2000000006	Wake Forest University	Wake Forest University														
207	2000000007	Wake Forest University	Wake Forest University														
208	2000000008	Wake Forest University	Wake Forest University														
209	2000000009	Wake Forest University	Wake Forest University														
210	2000000010	Wake Forest University	Wake Forest University														
211	2000000011	Wake Forest University	Wake Forest University														
212	2000000012	Wake Forest University	Wake Forest University														
213	2000000013	Wake Forest University	Wake Forest University														
214	2000000014	Wake Forest University	Wake Forest University														
215	2000000015	Wake Forest University	Wake Forest University														
216	2000000016	Wake Forest University	Wake Forest University														
217	2000000017	Wake Forest University	Wake Forest University														
218	2000000018	Wake Forest University	Wake Forest University														
219	2000000019	Wake Forest University	Wake Forest University														
220	2000000020	Wake Forest University	Wake Forest University														

TANK DATA SUMMARY		Site Details		Comments		Date/Condition		Status		Inspection		Leakage		Capacity		Special Comments	
Item	Equipment ID	Site Name	Site Address	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition
221	2000000021	Wake Forest University	Wake Forest University														
222	2000000022	Wake Forest University	Wake Forest University														
223	2000000023	Wake Forest University	Wake Forest University														
224	2000000024	Wake Forest University	Wake Forest University														
225	2000000025	Wake Forest University	Wake Forest University														
226	2000000026	Wake Forest University	Wake Forest University														
227	2000000027	Wake Forest University	Wake Forest University														
228	2000000028	Wake Forest University	Wake Forest University														
229	2000000029	Wake Forest University	Wake Forest University														
230	2000000030	Wake Forest University	Wake Forest University														

TANK DATA SUMMARY		Site Details		Comments		Date/Condition		Status		Inspection		Leakage		Capacity		Special Comments	
Item	Equipment ID	Site Name	Site Address	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition
231	2000000031	Wake Forest University	Wake Forest University														
232	2000000032	Wake Forest University	Wake Forest University														
233	2000000033	Wake Forest University	Wake Forest University														
234	2000000034	Wake Forest University	Wake Forest University														
235	2000000035	Wake Forest University	Wake Forest University														
236	2000000036	Wake Forest University	Wake Forest University														
237	2000000037	Wake Forest University	Wake Forest University														
238	2000000038	Wake Forest University	Wake Forest University														
239	2000000039	Wake Forest University	Wake Forest University														
240	2000000040	Wake Forest University	Wake Forest University														

TANK DATA SUMMARY		Site Details		Comments		Date/Condition		Status		Inspection		Leakage		Capacity		Special Comments	
Item	Equipment ID	Site Name	Site Address	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition	Inspected	Condition
241	2000000041	Wake Forest University	Wake Forest University														
242	2000000042	Wake Forest University	Wake Forest University														
243	2000000043	Wake Forest University	Wake Forest University														
244	2000000044	Wake Forest University	Wake Forest University														
245	2000000045	Wake Forest University	Wake Forest University														
246	2000000046	Wake Forest University	Wake Forest University														
247	2000000047	Wake Forest University	Wake Forest University														
248	2000000048	Wake Forest University	Wake Forest University														
249	2000000049	Wake Forest University	Wake Forest University														
250	2000000050	Wake Forest University	Wake Forest University														



Annual Tank Inspection Checklist (STI SP001)

General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date for SPCC compliance)
Prior Inspection Date: _____	Inspector Name: _____
Tanks Inspected (ID #s): _____	

Item	Status	Comments
1.0 Tank Containment		
1.1 Containment structure in satisfactory condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
1.2 Drainage pipes/valves fit for continued service?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
2.0 Tank Foundation and Supports		
2.1 Evidence of tank settlement or foundation washout?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.2 Cracking or spalling of concrete pad or ring wall?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.3 Tank supports in satisfactory condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
2.4 Water able to drain away from tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
2.5 Grounding strap secured and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
3.0 Cathodic Protection		
3.1 CP system functional	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3.2 Rectifier Reading:		
4.0 Tank External Coating		
4.1 Evidence of paint failure?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	

(*) designates an item in non-conformance status. This indicates that action is required to address a problem.

Annual Tank Inspection Checklist (STI SP001)

Item	Status	Comments
5.0 Tank Shell/Heads		
5.1 Noticeable shell/head distortions, buckling, denting or bulging?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
5.2 Evidence of shell/head corrosion or cracking?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
6.0 Tank Manways, Piping and Equipment within Secondary Containment		
6.1 Flanged connection bolts tight and fully engaged with no sign of wear or corrosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
7.0 Tank Roof		
7.1 Standing water on roof?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
7.2 Evidence of coating cracking, crazing, peeling, blistering?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
7.3 Holes in roof?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
8.0 Venting		
8.1 Vents free of obstructions?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
8.2 Emergency vent operable? Lift as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
9.0 Insulated Tanks		
9.1 Insulation missing?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.2 Are there noticeable areas of moisture on the insulation?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.3 Mold on insulation?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.4 Insulation exhibiting damage?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.5 Is the insulation sufficiently protected from water intrusion?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	

(*) designates an item in non-conformance status. This indicates that action is required to address a problem.



Annual Tank Inspection Checklist (STI SP001)

Item	Status	Comments
10.0 Level and Overfill Prevention Instrumentation of Shop-Fabricated Tanks		
10.1 Has the tank liquid level sensing device been tested to ensure proper operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
10.2 Does the tank liquid level sensing device operate as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
10.3 Are overfill prevention devices in proper working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
11.0 Electrical Equipment		
11.1 Are tank grounding lines in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
11.2 Is electrical wiring for control boxes/lights in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	

Additional Comments

(*) designates an item in non-conformance status. This indicates that action is required to address a problem.

Annual Tank Inspection Checklist (STI SP001)

STI SP001 Annual Inspection Checklist

Inspection Guidance:

- For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Inspect the AST shell and associated piping, valves, and pumps including inspection of the coating for Paint Failure.
- Inspect:
 1. Earthen containment structures including examination for holes, washout, and cracking in addition to liner degradation and tank settling.
 2. Concrete containment structures and tank foundations/supports including examination for holes, washout, settling, paint failure, in addition to examination for corrosion and leakage.
 3. Steel containment structures and tank foundations/supports including examination for washout, settling, cracking, and for paint failure, in addition to examination for corrosion and leakage.
- Inspection of cathodic protection system, if applicable, includes the wire connections for galvanic systems and visual inspection of the operational components (power switch, meters, and alarms) of impressed current systems.
- Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and dispose of it properly.
- In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 C.F.R. § 112.8(8)(v)).
- (*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.
- Complete this checklist on an annual basis supplemental to the owner monthly-performed inspection checklists.
- **Note: If a change has occurred to the tank system or containment that may affect the SPCC Plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.**

(*) designates an item in non-conformance status. This indicates that action is required to address a problem.



Monthly Trash Compactor Inspection Checklist

Check for the presence and acceptable condition of all the following applicable parameters and note any comments or deficiencies below.

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
INSPECTOR INITIALS												
DATE												
Trash Compactor												
EVIDENCE OF RUST OR DETERIORATION												
EVIDENCE OF LEAKAGE												
OTHER ISSUES												

Issues: _____

APPENDIX E: TANK DRAWINGS

