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Integrated Contingency Plan



**NASA Goddard Space Flight Center
Medical and Environmental Management Division
Code 250
Greenbelt, Maryland 20771**

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Visit <https://itcdsp13.gsfc.nasa.gov/sites/EMS/ICP/SitePages/Home.aspx> to verify that this is the correct version.

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List of Acronyms and Abbreviations (Used in this document)

AST	Aboveground Storage Tank
BARC	Beltsville Agricultural Research Center
BEP	Building Emergency Plan
CERCLA	Comprehensive Environmental Resource Compensation and Liability Act
CFR	Code of Federal Regulations
CMU	Concrete Masonry Unit
COMAR	Code of Maryland Annotated Regulations
CWA	Clean Water Act
DOT	Department of Transportation
EC	Environmental Contractor
EOC	Emergency Operations Center
EMO	Emergency Management Officer
EMP	Emergency Management Program Plan
ENS	Emergency Notification System
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FOC	Facilities Operations Console
FOM	Facilities Operations Manager
FMD	Facilities Management Division
GIS	Geographic Information System
GPR	Goddard Procedural Requirements
GPRS	Goddard Problem Reporting System
GSFC	Goddard Space Flight Center
HCC	High Capacity Centrifuge
HMMS	Hazardous Materials Management System
IC	Incident Commander
ICP	Integrated Contingency Plan
ICS	Incident Command System
LEPC	Local Environmental Planning Commission
LQG	Large Quantity Generator
ILMD	Information and Logistics Management Division
MDE	Maryland Department of the Environment
MEG	Miller Environmental Group
MEMD	Medical and Environmental Management Division
MPH	miles per hour
NASA	National Aeronautics and Space Administration
NAIC	North American Industrial Classification
NFPA	National Fire Protection Association
NPDES	National Pollution Discharge Elimination System
NRT	National Response Team
OSCP	Oil Spill Contingency Plan
OSHD	Occupational Safety and Health Division
OWS	Oil Water Separator
PCBs	Polychlorinated Biphenyls

PE	Professional Engineer
PEPCO	Potomac Electric Power Company
PG	Procedures and Guidelines
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantities
RTS	Release Tracking System
SDS	Safety Data Sheets
SAA	Satellite Accumulation Area
SOC	Security Operations Center
SOP	Standard Operating Procedure
SPCC	Spill Prevention Control and Countermeasure Plan
SQG	Small Quantity Generators
STI	Steel Tank Institute
TMD	Tank Management Database
TPQ	Threshold Planning Quantity
WI	Work Instruction
WSSC	Washington Suburban Sanitary Commission

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Executive Summary

The Medical and Environmental Management Division (MEMD) has updated this Integrated Contingency Plan (ICP) in order to provide processes, procedures and guidance to the National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC), Greenbelt employees in meeting Federal and State of Maryland regulations pertaining to emergency response procedures and bulk oil management. GSFC has elected to combine requirements for emergency spill response and bulk oil management in one plan, under guidance from the National Response Team (NRT). This Plan meets the applicable regulatory requirements under:

United States Environmental Protection Agency's (EPA) Oil Pollution Prevention Regulations (Spill Prevention, Control and Countermeasures (SPCC) Plan and Facility Response Plan Requirements) – 40 Code of Federal Regulations(CFR) 112.7 and 112.8;

EPA Oil Removal Contingency Plan Regulations (Criteria for State, local and regional oil spill removal contingency plans) – 40 CFR 109;

EPA's Resource Conservation and Recovery Act (RCRA) Contingency Plan and Emergency Procedures – 40 CFR Part 262, Subpart M and Code of Maryland Annotated Regulations (COMAR) Section 26.13.05.04; and

Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Regulations – 29 CFR 1910.120 (a) (iv) and (v).

As outlined in this Plan, all oil and hazardous materials releases at GSFC shall be reported to the Security Operations Center (SOC) by dialing 911 on any GSFC land line phone or (301) 286-9111 using any other phone. The Protective Services Division carries out the function of the Incident Commander (IC) and is responsible for responding to all releases and for coordinating initial response procedures. Employees at GSFC, including contractor employees, are expected to read and understand their building's Building Emergency Plan (BEP), as this document does not cover its content.

GSFC meets the qualification criteria for reportable discharge history as defined in 40 CFR 112.7 (k)(1) and has not had a spill of more than 1,000 gallons or two spills of 42 gallons or more of oil during the three years prior to the certification of this plan. Furthermore, neither have there been any significant spills as detailed in the Maryland Oil-handling Facility Permit definitions, nor have there been releases of hazardous substances in excess of their reportable quantities under Section 311 of the Clean Water Act (CWA) (see 40 CFR 110.3 and 40 CFR 117.3 or Section 102 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (see 40 CFR 302.4) that have occurred at GSFC during the twelve (12) months prior to the preparation of this document.

NASA GSFC, pursuant to 40 CFR 109.5, hereby establishes an Oil Spill Contingency Plan (OSCP) as a component of GSFC's ICP. NASA GSFC acknowledges its responsibility to its neighbors, employees and the community in general to take all responsible steps necessary to

prevent spills from its facility in order to protect human health and the environment. This OSCP provides additional information intended to ensure effective action to minimize damage resulting from oil discharges. If, despite prevention efforts (as outlined by the ICP) a spill does occur, the agents and employees of NASA GSFC shall take all necessary steps as outlined in the OSCP to minimize the impact of such a spill.

Procedures for fuel oil transfers, tank inspection and draining storm water from secondary containment structures are written in compliance with the oil pollution prevention regulations. All oil-handling personnel are required to have annual training on the ICP.

1.0 Plan Management and Approval

1.1 Management Approval

40 CFR 112.7 requires the SPCC plan to have full approval of facility management. Certification of adequate response resources is required. Goddard Procedural Requirements (GPR) 8500.5 – Water Management, requires that all employees, contractor and civil servants, adhere to the requirements of the ICP.

The ICP will be implemented as herein described. Adequate response resources will be maintained. The Chief of MEMD has the authority, pursuant to Federal financial and procurement laws and regulations, to commit the necessary equipment, supplies, services and personnel to respond to any discharge and to request assistance from local and state regulatory agencies, contractors or other responders as appropriate.

Signature



Date

18 March 19

Name:

Raymond J. Rubilotta

Title/Position:

Director, Code 200

1.3 Certification of the Applicability of the Substantial Harm Criteria

40 CFR 112 Attachment C11

Facility Name/Address: National Aeronautics and Space Administration
Goddard Space Flight Center
8800 Greenbelt Road
Greenbelt, MD, 20771

- 1 Does the facility transfer oil over water or from vessels, and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes No

- 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 storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
Yes No

- 3 Does the facility have a total oil storage capacity greater than or equal to 1 million gallons, and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to Appendix C of 40 CFR 112 or a comparable formula) such that a discharge from the facility could cause injury to fish, wildlife and sensitive environments? For further description of fish, wildlife and sensitive environments, see Appendices I, II and III to DOC/NOAA/s "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E of 40 CFR 112, Section 13 for availability) and the applicable Area Contingency Plan.
Yes No

- 4 Does the facility have a total storage capacity greater than or equal to 1 million gallons, and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to Appendix C of 40 CFR 112 or a comparable formula) such that a discharge from the facility would shut down a public drinking-water intake?
Yes No

- 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

Certification:

I certify under penalty of law that I have personally examined and that I 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.

Signature:  Date: 2/11/2019
Name: Lori Levine
Title: Oil Operations Program Manager

1.4 Certification of Containment Building (Less-Than-90-Day-Accumulation Facility, Bldg. 27A)

In compliance with 40 CFR 267.1101 (h), I hereby attest:

- a. That I am familiar with the requirements of 40 CFR 267.1101, 1102 and 1103.
- b. That I or my agent has visited and examined the containment building.
- c. That this containment building design meets the requirements of 40 CFR 267.1101 paragraphs (a) through (h).
- d. That the maintenance of this containment building meets the requirements of 40 CFR 267.1102; and
- e. That the containment systems of this containment building meet the requirements of 40 CFR 267.1103.

A description of the design and features of the containment building are detailed in relation to these requirements in **Section 8** of this document. This certification in no way relieves the owner or operator of the facility of their duty to maintain this building in accordance with the requirements of 40 CFR 267.1101. This certification is valid only to the extent that the facility owner or operator maintains, tests and inspects equipment, containment and other devices as prescribed in **Appendix D**.

Surendera Kumar 2/11/19
Signature Date

Engineer: Surendera Kumar

License No.: 0402019054 Expiration Date: 11/30/2020

SEAL



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF Virginia LICENSE NO. 0402019054, EXPIRATION DATE 11/30/2020.

1.5 Plan Management

The ICP, herein referred to as the “Plan,” represents a consolidation of the existing environmental emergency response plan requirements at GSFC. Specifically, the SPCC Plan, the OSCP and the RCRA Contingency Plan have been consolidated into a single plan. Future revisions of the Plan may incorporate other emergency planning documents currently in place at GSFC and/or other contingency planning requirements as identified.

MEMD maintains the signed original copy of the ICP. A link to the current version of the Plan is available on the GSFC MEMD website. Copies will be provided to various off-site organizations as mandated by Federal, state and local laws, regulations and policies.

Table 1 – Plan Revision History

Revision	Date	Description	Reviewed/Approved
0	1999	Final ICP	2000
1	2004	Revised/certified by Professional Engineer (PE)	2004
2	2006	Revised/recertified by PE	2006
3	2008	Revised	2008
4	2009	Revised/recertified by PE	2009
5	2012	Revised/recertified by PE	2013
6	2014	Amended	2014
7	2015	Amended	2015
8	2017	Amended	2017
9	2018	Revised/amended/recertified by PE	2018

1.5.1 Plan Critique, Revision and Amendment

MEMD will review the Plan based on the Plan’s implementation in response to a simulated or actual emergency response to determine if it meets the stated goals and objectives. The Emergency Management Officer (EMO) along with support from MEMD will be responsible for conducting response activities. A post-response discussion and evaluation will be performed to determine the effectiveness of the response. If modifications to the Plan are necessary, they will be made by MEMD based on the information derived from the response. Plan updates and modifications are viewed as part of an ongoing improvement process.

40 CFR 112.5(a) requires the SPCC Plan to be amended whenever there is a change in facility design, construction operation or maintenance that materially affects the potential for a discharge of oil into or upon the navigable waters of the United States. Additionally, COMAR 26.13.05.04(E) requires that the Plan shall be reviewed and immediately amended, as necessary, whenever the facility permit is revised, the Plan fails in an emergency, the list of emergency coordinators changes or the list of emergency equipment changes. An addition to the volume, change of storage tank material (diesel to biodiesel) or new source (e.g., a new transformer) may require PE review and certification. Administrative changes or those that do not materially

affect the potential for a discharge (such as changes to drainage basin delineation, building construction and deconstruction) do not need to be reviewed or certified by a PE.

2.0 Plan Introduction

The Plan is part of GPR 8710.2, GSFC Emergency Management Program (EMP) Plan for Greenbelt, which will be referenced throughout this Plan for overall management used by GSFC for emergencies. This Plan applies only to the Greenbelt, Maryland, location.

The U.S. EPA, as the chair to the National Response Team (NRT), has provided a mechanism for consolidating multiple plans that facilities have into a single functional plan to comply with Federal, state and agency-wide regulations. This Plan was developed from the recommendations included in the ICP guidance by the NRT, dated June 1996, and consolidated requirements from the following applicable emergency response plans:

- EPA's Oil Pollution Prevention Regulation (SPCC Plan and Facility Response Plan Requirements) – 40 CFR 112.7 and 112.8
- EPA's Oil Removal Contingency Plan – 40 CFR 109.5
- EPA's Preparedness, Prevention, and Emergency Procedures for Large Quantity Generators – 40 CFR 262 Subpart M and COMAR section 26.13.05.04
- OSHA Hazardous Waste Operations and Emergency Response Regulations – 29 CFR 1910.120 (a)(iv) and (v)

This Plan varies from the applicable requirements, as follows. The Incident Commander (IC) used in this plan meets the regulatory responsibilities outlined in 40 CFR 262.264 for the facility's Emergency Coordinator. Rather than attaching policies and procedures for every foreseeable type of emergency at GSFC, the Plan is an appendix to GSFC's EMP and contains information relevant to spill responses and chemical releases. The EMP is organized for use in an emergency situation. The EMP and its appendices contain the GSFC incident command system (ICS), financial structure, and non-chemical release related information and procedures for major emergencies at the facility.

The Regulatory Compliance and Cross-Reference Matrices in **Appendix H** address the regulations that apply to GSFC as they relate to the Plan. Additional internal procedures, documents and submittals discuss GSFC's compliance with its Oil Operations Permit from the Maryland Department of Environment (MDE) and other applicable permits and regulations maintained at the facility.

2.1 Objective

The objective of this Plan is to minimize hazards to human health and the environment in the event of an unplanned release of oil or non-radiological hazardous substance to the air, soil, surface or the sanitary sewer system at GSFC. A coordinated effort involving GSFC staff and necessary assistance from the local fire department, outside contractors, MDE and EPA will be employed to achieve this goal.

2.2 Plan Organization

The Plan is organized as follows:

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Section 8 Hazardous Material and Wastes

Section 1 contains Management Approval, the PE certification of the Plan, the Certification of Applicability of Substantial Harm Criteria, and Plan Revisions. Section 2 provides an introduction, purpose and scope of the Plan, with key personnel and facility information. Section 3 provides a description of the physical location along with basic information regarding the facility geography and services. Sections 4 through 8 provide a more detailed description of GSFC, the emergency systems, prevention mechanisms, engineered and operational controls, and inspection and maintenance protocols and procedures. Additional information applicable to facets of the Plan is in the appendices at the end of the document.

2.3 Applicability

This Plan developed for GSFC Greenbelt is applicable to the following potential chemical emergencies:

- Discharge of oil from GSFC into navigable waters of the State of Maryland as prescribed by 40 CFR 112.1
- Emergency response to hazardous substance spills/release on GSFC property, with specific provisions for Building 27A (Less-than-90-day Facility).

In order to comply with applicable regulations, this Plan includes the following information:

- Procedures established to prevent the occurrence of oil spills
- Clear outlines of the plan of action to be taken in response to spills (i.e., spill control and countermeasures)
- Facility maps, description and diagrams
- Training requirements for key personnel
- Discussion of the facility's SPCC conformance and reasons for nonconformance (if applicable)
- Capacity and contents of each container 55 gallons or greater storing petroleum and non-petroleum oils
- Emergency contacts
- Disposal methods for recovered materials
- Prediction of the direction, flow rate and total quantity of oil potentially released
- Organized discharge response procedures that are readily usable in an emergency
- Descriptions of engineering controls installed to prevent spills
- Descriptions of operational controls maintained to prevent spills
- Rationale and contingencies for non-practicable containment and/or diversionary structures

2.4 Conformance with 40 CFR 112 Requirements

The Plan also addresses activities associated with handling, transfer, removal, storage, disposal and use of oil at various locations at GSFC. The Plan details spill reporting requirements and outlines actions needed for GSFC to comply with its Oil Operations Permit issued by MDE.

This Plan establishes emergency response contacts, equipment and procedures to comply with the EPA's Contingency Plan and Emergency Procedures regulations. Hazardous substance management procedures are described in GPR 1700.2 – Chemical Hygiene Program, GPR 1700.5 – Control of Hazardous Energy (Lockout/Tagout), GPR 1700.8 GSFC – Hazard Communication Program, and GPR 8500.3 – Waste Management.

2.5 Past Oil Discharge Experience

GSFC has not had an oil release from any of the regulated bulk storage containers during the past three years. The largest petroleum release at the facility was approximately ten (10) quarts released on 10/4/2016 as a result of a fuel release from a tour bus.

GSFC tracks all releases—regardless of the type, source, or extent—in the Release Tracking System Database. The database is the repository for chemical and petroleum releases from any operation and location at GSFC. The preponderance of petroleum products released into the environment at GSFC are from motor vehicles.

The major source of releases at GSFC come from hydraulic fluid. Hydraulic fluid is found in a heavy equipment and various trucks. Hydraulic fluid releases rarely exceed one gallon. The second most commonly released materials are motor fuels and oils.

3.0 Facility Description

GSFC was established in 1959 to provide support for space research and exploration. Today, the mission of GSFC includes Earth sciences, space science, communications, and data processing. GSFC is Federally-owned property with an extensive network of buildings, laboratories, fabrication and testing facilities. The North American Industrial Classification (NAIC) code for GSFC is 927110 (Space Research and Technology).

GSFC operates 24-hours per day, seven days per week, with the largest population of employees occurring Monday through Friday from 08:00 AM to 05:00 PM. Protective Services personnel monitor GSFC continuously and operate checkpoints at each of the facility entrances.

3.1 Type and Layout of Facility

GSFC is comprised of approximately 1,270 acres as illustrated in **Figure 1**. The facility is made up of the main GSFC campus and four non-contiguous areas referred to as the Antenna Test Range (Area 100 – Tests have not been conducted in this area since November of 2002), the Goddard Geophysical and Astronomical Observatory (Area 200), the Magnetic Test Facility (Area 300) and the Bi-Propellant Test Facility (Area 400) as depicted on **Figure 2**. The center consists of 35 major buildings along with multiple others sheds, towers and other structures.

The Main Campus contains a wide variety of buildings with multiple uses, such as laboratories, warehouses, electroplating shops, offices, data processing, and support structures. Of the 1,270 acres that comprise GSFC, approximately 210 of them are impervious to rainwater infiltration. On any given day, the facility is home to approximately 3,000 civil servants and 4,500 contract employees.

3.1.1 Climatology

During the winter months, the average daily low temperature is 34° F and the extreme low is -14° F. During the summer months, the average daily high temperature is 88° F and the extreme high daily temperature is 107° F. The average annual rainfall is 39 inches and the average annual snowfall is 23 inches. Precipitation is spread out throughout the year.

3.2 Facility Geology and Hydrology

GSFC is located within the Maryland State Coastal Plain region, which is characterized by gently rolling terrain regionally dipping southeast with underlying stratified layers of sand, gravel, silt and clay. The soils at GSFC are comprised of deep level to steep well-drained sandy and clayey soils and level to sloping moderately deep, and moderately drained soils that have compact subsoil.

No areas at GSFC lie within the 100-year floodplain. The topography at GSFC consists of gentle slopes in varied directions. The average surface elevation above mean sea-level within the GSFC ranges from 118 feet (at the outfall from the northwest collection pond) to 226 feet at the southeast perimeter (**Figure 3**).

There are two subsurface aquifers beneath GSFC. The Patapsco formation is a mostly unconfined aquifer extending from the surface to a depth of 250 feet and generally flows south. Precipitation in the outcrop areas and/or leakage from adjacent formations recharges the Patapsco locally. The Patuxent formation is a confined aquifer that is approximately 400 feet below ground surface (bgs). A clay lens up to 200-feet thick separates the Patuxent from the Patapsco formation.

GSFC maintains extensive storm and sanitary sewer systems on the main campus that could provide pathways to sensitive waters of the State in the event of a catastrophic release of petroleum (see **Figures 4 and 5**, respectively). On the main campus, storm drains are confined to developed areas. There are nine separate drainage networks (sub-basins). The storm water conveyance systems and topographical variations influence the drainage boundaries. Storm drains on the western side of the main campus are extensively networked to the conveyance system. Conveyance on the eastern side of the main campus is more localized and directed to nearby storm water structures. Once collected, the runoff is conveyed to stormwater management structures such as wet and dry ponds, swales and ditches. In the remote areas, drainage is primarily influenced by topography.

GSFC is located at the drainage divide between the Anacostia and Patuxent River basins. As a result there are four separate tributary stream systems to where surface storm water or a hazardous material/oil discharge might potentially migrate. Discharge points along the north and west sides and the four remote areas drain toward two tributaries of the Anacostia River. Discharge points along the south and the east perimeter of the site drain toward two tributaries of the Western Branch of the Patuxent River.

3.3 Site Location and Directions

Located in Prince George's County, Maryland, GSFC lies within the Washington, DC, metropolitan area—about seven miles northeast of the District of Columbia. The distance between the western site perimeter and the I-95/I-495 Washington Beltway interchange with the Baltimore-Washington Parkway (MD 295) is approximately one mile. The nearest emergency room to GSFC is located at Doctor's Community Hospital in Greenbelt, Maryland.

To drive from areas north, follow MD-295 South (Baltimore -Washington Parkway) toward Washington, DC, and take the exit for MD-193 East. Make a left at the traffic light (Southway) and the next left onto MD-193. Follow MD-193 for 1.6 miles; the entrance to the GSFC Main Gate will be on the left. Alternatively, follow I-95 South to the Capital Beltway (I-495), follow I-495 East (left-hand split) to MD-193/Greenbelt Rd. Follow MD-193 to GSFC.

From areas south, follow MD-295 North toward Baltimore, and take the exit for MD-193 East. Follow MD-193 East to GSFC. Alternatively, take I-95/I-495 Beltway North to the exit for MD-193/Greenbelt Road. Follow MD-193 East to GSFC.

From areas east, follow US-50 West toward Washington, DC, and exit onto I-95/I-495; take the MD-193/Greenbelt Road exit and follow MD-193 East toward GSFC.

3.4 Mailing Address

NASA's Goddard Space Flight Center
8800 Greenbelt Road
Attn: Code 250
Greenbelt, Maryland, 20771

3.5 Site Services

Arterial roads at the facility are accessible and maintained by the Facilities Management Division (FMD). The Potomac Electric Power Company (PEPCO) supplies GSFC with a 34.4 kilovolt electrical power supply by means of three overhead feeder lines. Power is converted at two substations located at the facility and then distributed throughout the entire facility by both underground and overhead cables.

GSFC uses water provided by Washington Suburban Sanitary Commission (WSSC) to meet the facility's needs. Potable water is provided by WSSC to all buildings at the main campus and the remote areas 200 through 400. Potable water is provided by the Beltsville Agricultural Research Center (BARC) to Area 100. A 300,000-gallon capacity, elevated steel water-storage tank is centrally located within the GSFC-site water distribution system, which is sized for fire protection flows. **Figure 6** contains the locations of the fire protection systems and hydrants located throughout GSFC facility.

Sanitary sewer collection at GSFC is handled by a combination of three separate sewer pipe networks that discharge to the WSSC system. All remote areas are served by local septic tanks or septic leach fields. WSSC does not provide sanitary sewer service to the remote areas.

3.6 Site Security

GSFC is a secured facility surrounded by a steel security fence topped by barbed wire. With the exception of Buildings 88 and 92, all points of egress are protected by armed Protective Services personnel. When not in use, entrances are locked and blocked. All remote areas are fenced and secured to allow only authorized personnel entrance. Select members of the security force are trained as Emergency Medical Technicians, who can provide basic life support functions and are available to respond to medical emergencies 24 hours per day, seven days per week.

All bulk oil and hazardous materials storage are located within the secured facility. In addition to the facility-wide security controls, GSFC institutes operational controls as discussed in **Section 4** of this document.

4.0 Storage and Use of Petroleum Oils

GSFC maintains an oil storage capacity that exceeds the SPCC regulatory threshold of 1,320 gallons. The regulations are specific as to the size and types of containers covered. SPCC regulates all containers with a shell capacity equal to or greater than 55-gallons. Oil-filled equipment is exempt from SPCC regulations since it is not considered to be a bulk storage unit. By definition, oil-filled equipment is any equipment where oil is an integral part of its operation. Examples of oil-filled equipment include, transformers, elevator hydraulics and similar items. These items are not counted toward the facility's total oil volumes; however, they do need to be addressed in the SPCC plan.

Appendix I provides the currently active SPCC facility volume. In addition to their respective volumes, each location is identified. Oil storage locations are shown in **Figure 7**.

4.1 Bulk Oil Storage Units

The terms and conditions of GSFC's Oil Operations Permit issued by MDE allows for the use of aboveground storage tanks (AST) at GSFC. SPCC regulations use the term Bulk Storage Containers, while MDE differentiates between ASTs and 55-gallon drums. GSFC uses a nine digit identification number for oil storage containers:

- 3 digit location code
- 3 digit tank type
- 3 digit tank ID

A current listing of bulk storage containers (ASTs and drums) is maintained in a tank management database (TMD). Other regulated oil-filled equipment meeting the volume threshold are also maintained in the database.

4.1.1 Stationary ASTs

Stationary ASTs make up the preponderance of the oil storage capacity at GSFC. The largest of these is the tank system (fuel farm) consisting of three 50,000-gallon ASTs that store #2-fuel oil at the Central Heating and Refrigeration Plant located at Building 24. Other large tank systems include two 20,000-gallon diesel fuel ASTs at the East Campus Heating and Refrigeration Plant located at Building 31 and four 5,000-gallon tanks holding diesel, bio-diesel, gasoline, and E-85 fuel at Building 27.

Detailed descriptions for the ASTs are provided in the engineering report prepared by Mid-Atlantic Environmental, Inc., dated April 26, 2001. The current year AST inspection report, as well as the aforementioned engineering report, are housed in MEMD files. As-built drawings of

the stationary ASTs and ancillary piping are maintained by the Facilities Management Division (FMD) and are available electronically through FMD via GSFC's computer-aided design and drafting system.

4.1.2 Mobile and Transportable Bulk Storage Containers

GSFC operates one mobile refueler on a trailer used to transfer #2-fuel oil on-site. GSFC has a variety of mobile and transportable generators located throughout the facility. **Figure 7**, illustrates the designated storage locations of the mobile and transportable generators.

4.1.3 Bulk Oil Containers (Drums)

SPCC regulations designate drums with a shell capacity of 55-gallons or more as bulk storage containers. The GSFC drum inventory is dynamic, and there are multiple storage locations throughout the facility. The maximum storage capacity for drums is based on an assessment of the area and sound engineering principles. The drum inventory in **Appendix I** reflects the number and volume in gallons from the day the inventory was taken. A secondary containment pallet or other means of spill control is employed for 55-gallon drums.

4.1.4 Oil-Filled Operating Equipment

GSFC has oil-filled equipment throughout the facility, such as hydraulic elevators and oil-filled transformers. The volume of materials in oil-filled operational equipment does not accrue toward the facility's SPCC regulatory net volume. These items are by statute not considered to be bulk storage containers, regardless of the associated volume. Although not accounted for in the facility's SPCC regulatory net volume, they are addressed in the OSCP (40 CFR 109 and 112.7).

4.1.4.1 Transformers

GSFC owns and operates air-cooled and oil-cooled transformers throughout the center. GSFC has no PCB or PCB-contaminated, oil-filled transformers.

4.1.4.2 Elevators, Mechanical Lifts and Assorted Equipment

GSFC owns and operates elevators, mechanical and vehicle lifts. Elevators and most lifts use hydraulic fluid. The smaller vehicle and mechanical lifts use gear oil. There are two oil water separators (OWS) located at GSFC. One is located in the vehicle maintenance garage; the other, in Building 95, is presently non-operational. Both OWSs discharge to the sanitary sewer system and are maintained in accordance with GSFC's discharge authorization permit issued by WSSC. The flow through tank in the OWS is exempt from SPCC regulation.

4.2 Facility Transfer Operations

4.2.1 Bulk Oil Transfers

GSFC performs bulk oil transfers. GSFC accepts bulk deliveries to fill fuel oil tanks, in accordance with its Oil Operations Permit. The fuel oil tanks are filled via transfer of product from tanker truck to stationary tank in accordance with GSFC protocols. Buildings 24 (**Figure 8**) and 31 (**Figure 9**) are refueled at least once annually as heating demands require it. The bulk of the fuel deliveries come to Building 27 (**Figure 10**). The tanks at Building 27 feed the fuel pumps used to dispense fuel to facility vehicles.

4.3 Spill Prevention

In an effort to reduce the potential for a petroleum spill from entering waters of the State of Maryland, GSFC has developed and implemented spill prevention control and countermeasures as a means of complying with the Federal and state requirements under the SPCC regulations. These measures consist of institutional and engineering controls, routine inspections and maintenance, and follow up inspections. The following sections describe in detail the measures taken by GSFC.

4.3.1 Engineered Spill Prevention and Control

Engineered spill prevention and control includes designed secondary containment spill dikes and double-walled ASTs. These types of controls are designed specifically for the given area and/or container.

4.3.1.1 Containment and Diversionary Structures

Except as indicated earlier in this section, all ASTs have built-in secondary containment. Secondary containment is provided for 55-gallon drums. Secondary containment dikes that are exposed to rainfall are designed to hold the volume of the largest container plus sufficient freeboard to hold 10% excess volume or a 20-year rain-event, whichever is larger. The size calculations for the secondary containment structure at Buildings 24 and 31 are in **Appendix B**.

The secondary containment dike drains are locked at all times. Secondary containment dikes are located at Buildings 24 and 31. The liquid at the bottom is evaluated for the presence of an oil sheen before precipitation is drained. If no sheen is confirmed by a second evaluator, the lock is removed, the valve is opened and the precipitation is allowed to drain out of the secondary containment. A written record of the release of the precipitation is kept and available for inspection. The written procedure is in **Appendix B**.

4.3.1.2 Transformers

Oil-cooled transformers at GSFC meet the definition of qualified oil-filled operational equipment as outlined by 40 CFR 112.7 (k) (1), and most are not provided with secondary containment. GSFC has chosen to implement the alternative requirements prescribed by the SPCC regulations

in 40 CFR 112.7 (k) (2), which includes an oil-spill contingency plan following the provisions outlined in 40 CFR 109 and a written commitment of personnel, equipment and materials required to expeditiously control and remove any oil discharged that may be harmful. The 40 CFR 109 requirements are addressed in this Plan in **Section 6**.

GSFC's two transformer substations are equipped with secondary containment via underground oil recovery systems and are not addressed by the alternative requirements. At Building 24, there are two 4,386-gallon transformers located in a bermed area that drains into an in-ground oil recovery system located along the western fence line. At the Building 31 substation, all transformers are located within a bermed area that drains into an in-ground oil-recovery system located in the northwest corner.

4.3.1.3 Ancillary Piping and Valves

Ancillary piping is contained in a manner that any leaks or discharges may be easily detected and are retained long enough for cleanup to occur, such as a double walled piping or piping located within permanent physical containment structures. Piping is protected from vehicular traffic either spatially (above or below ground) or with warning signs and physical barriers. Master flow, drain valve or any other valves that permit direct outward flow of the tank's contents are secured in the closed position when not in use. All loading/unloading connections along with any starter controls are secured in the off/closed position when not in use.

4.3.1.4 Overfill protection

ASTs at GSFC are equipped with a fast response method for determining the liquid level of each bulk storage container to avoid discharges due to negligent overfilling. These systems include high-liquid-level alarms, high-liquid-level pump cutoff devices, or digital or direct vision gauges. Pop-up gauges are not used for primary high-liquid notification.

4.3.2 Operational Spill Prevention and Control

In addition to engineering controls, GSFC maintains this Plan as the primary tool to define operational controls for the management of petroleum operations, as well as hazardous waste accumulation procedures. The Plan integrates the components of the SPCC Plan in accordance with EPA's Oil Pollution Prevention Requirements (40 CFR 112), COMAR 26.10.01.09, and EPA's Preparedness, Prevention, and Emergency Procedures for Large Quantity Generator regulations. This plan also meets the applicable statutory requirements as specified in 40 CFR 109 for OSCP.

The OSCP contains an evaluation of the oil storage containers with active containment in the various drainage areas on the center. Active containment measures are those that require deployment or other specific action to be deployed either before the start of an activity involving the handling of oil, or in reaction to a discharge to prevent an oil spill from reaching navigable water or adjoining shorelines. In the event of a release, oil would flow following surface contours and topography. Because these containers (bulk storage units and transformers) are widely distributed across the 1,270 acre property, the potential discharge directions will vary. Given a sufficient volume, oil would drain to either the Anacostia or the Patuxent rivers.

Oil-filled transformers cannot tolerate more than a 10% loss of transformer oil before failure. Transformers that lose more than approximately 10% oil will fail and will result in a maintenance investigation by FMD.

Other oil-filled equipment, such as elevator hydraulic systems, are located in buildings that act like secondary containment; and, as such, the likelihood of a release to the environment is limited. Sumps in elevator pits contain oil-sensing sumps to prevent the discharge of oily water to the environment.

An inventory of the types and locations of spill control equipment can be found in **Appendix G**.

4.3.2.1 Lighting

As required by regulation, each AST has sufficient lighting so that Protective Services or other personnel have the ability to see a release at night or to prevent acts of vandalism and in turn take appropriate action.

4.3.2.2 Labelling

Bulk storage containers are labeled properly. ASTs are marked to identify the tank's contents (e.g., gasoline, #2-fuel oil) and the associated hazards to aid the HAZMAT first responders in the event of a release. Tanks containing either combustible or flammable liquids have a sign or label that complies with the requirements of the National Fire Protection Association (NFPA) 704 – Standard System for the Identification of Hazardous Materials for Emergency Response (i.e., NFPA diamond) or another recognized system such as a DOT hazard class placard.

All tanks must have two complete sets of labels. The labels will be placed on the tanks so that they can be seen by emergency responders from a safe distance. The labels will be placed on the side of the tank facing an access point. All containers of spent or used oil will be labeled "USED OIL."

4.3.2.3 Transfer Operations

4.3.2.3.1 Loading and unloading operations

Various petroleum products are delivered by tanker truck to ASTs at GSFC. The materials either go into ASTs to be used to provide energy for critical system such as climate control operations (heating/cooling) or into ASTs for subsequent dispensing to fuel GSFC's vehicle fleet. GSFC's oil transfer operations do not use a loading/unloading rack as defined in the regulations. Refer to **Appendix E** for the Standard Operating Procedure (SOP) regarding fuel transfers between tanker trucks and stationary ASTs.

4.3.2.3.2 Truck Unloading Areas

At Buildings 24 and 31, #2-fuel oil is transferred from a tanker truck to the appropriate tank. In addition to the institutional controls (as defined in **Appendix E**), engineering controls (diked

secondary containment and concrete berm surrounding the unloading areas) are present. At Building 24, a stormwater drain is located within 10 feet of the tank system fill-port. The stormwater drain is covered and blocked prior to the transfer of fuel.

Fuel unloading without secondary containment occurs at the tank areas for the fuel dispensing pumps at Building 27. All filling operations are conducted along the north side of the ASTs. There are no stormwater drains located on this side of the ASTs. As indicated earlier in this section, **Appendix E** addresses how these ASTs are filled. All four ASTs are double-walled and equipped with both audible and visual high-level-liquid alarms.

4.3.2.3.3 Vehicle Refueling Operations

Internal combustion engine vehicles owned and operated by GSFC obtain fuel from the dispensers located south of Building 27. Visual aids describing spill prevention and reporting procedures are prominently displayed at each pump. A heavy-gauge spill blanket has been installed at the fuel dispensing pumps. The spill blanket will help to trap residual materials in the pump nozzles and minimize non-point source pollution at GSFC.

4.3.2.4 Inactive ASTs

Periodically, an AST may be placed temporarily out of service or may be closed permanently. For the ASTs that are temporarily out of service, the contents are drained and the AST is isolated to prevent introduction of materials into the unit. The work instruction 250-WI-1700.5.1, Environmental Administrative Lock-Out/Tag-Out Procedures defines the procedures for performing the isolation. MEMD has a record of tanks that are administratively locked-out and those tanks that are to be permanently closed.

4.3.3 Oil Spill Contingency Plan

Secondary containment is not practical at certain oil-filled operational equipment on the center. Pursuant to 40 CFR 112.7(d), a strong OSCP that meets the requirements of 40 CFR 109, is provided herein and outlines the following:

- Provides for varying degrees of response depending on the severity of the discharge
- Specifies the order in which waterways are to be protected when more than one may be impacted by an oil discharge and identifies where response operations may not be adequate to protect all waterways
- Defines procedures for recovery of damages and enforcement actions as provided by state and local statutes

The purpose of the OSCP is to define procedures and tactics for responding to discharges of oil into navigable waters or the adjoining shorelines of the United States. The OSCP is activated when discharged oil has reached or threatens to reach ANY navigable waters. The OSCP is designed to assist response personnel in their efforts to contain and clean-up spilled materials.

Responsibilities and duties of all parties potentially involved in spill prevention planning and oil spill cleanup operations are outlined in **Section 6** of this Plan. Section 6 of this Plan also provides the notification and initial response procedures in the event of a release of oil. A commitment of personnel and resources, pursuant to Federal financial and procurement laws and regulations, has been authorized as indicated by Management Approval in Section 1. The predesignated response coordinator for initial response is provided by the IC and primary contact for this individual is provided in **Appendix L**. Support personnel are listed in Table 2 in Section 6.

4.3.3.1 Drainage Basins

GSFC is situated between two drainage watersheds. Nine (9) distinct drainage basins have been identified at the Main Facility of GSFC (**Figure 11**). Drainage basins for the outlying areas are shown on **Figure 12**.

4.3.3.2 Response Capabilities

Guidelines for specific actions and qualified personnel, in addition to using the maps and diagrams in this document shall be employed in the event of an oil discharge. The preplanned and arranged location for an oil-spill response operations center is the GSFC Incident Command as referenced in Section 6. Communication systems to be used in the event of an oil release are described in Section 7.

MEMD maintains a spill response trailer equipped with lights, a generator, extension cords and a variety of hand tools (shovels, brooms, etc.) necessary to clean up spilled petroleum. The trailer is equipped with spill pads (universal and oil-only), a sorbent boom and absorbent materials. To isolate a spill site, storm drain block and drain plugs are stocked. There are preassembled containment kits specifically designed for quick deployment at any stormwater outfall. The trailer has personal protective equipment (PPE) for the likely hazards that would be encountered along with chemical reference manuals.

4.4 Inspection and Maintenance

GSFC conforms to the provision of the Steel Tank Institute's (STI) – Standard for the Inspection of Aboveground Storage Tanks – SP001. Each aboveground container is tested or inspected as per integrity requirements of 40 CFR 112.8(c)(6) for ASTs. These tests are based on good engineering practice. The outside surfaces of the tank shells are observable on an ongoing basis. The ASTs are on a scheduled routine inspection program. The personnel performing the inspections are knowledgeable of storage facility operations, characteristics of the liquid being stored, and the type of AST and its ancillary components. The scope of the inspections and procedures used are covered in the training provided to employees involved in oil handling at GSFC.

Routine inspections focus on detecting any change in conditions or signs of product leakage from a tank, piping system and appurtenances. The tank's physical configuration combined with regularly scheduled inspections, ensures that any small leak that could develop in the tank shell

is detected before it can become significant and potentially escape secondary containment where it could impact the environment. This approach provides environmental protection equivalent to non-destructive shell testing.

A checklist for inspecting ASTs, including the desired frequency of inspections, as detailed in the following subsections, is provided in **Appendix D**. The inspection schedules are based upon STI's Standard for the Inspection of Aboveground Storage Tanks – SP001 (6th edition, January 2018). Inspection records for locations that store hazardous substances, petroleum, oil or lubricants are maintained for three years. The inspection records are retained by the owner/operator of the oil storage system.

4.4.1 ASTs

Visual inspections of ASTs, their secondary containment, aboveground piping, pumps and related equipment shall be conducted monthly by designated personnel to detect the potential accumulation of spilled oil, deterioration of the support equipment or tanks, or leaks that could be precursors to spills or tank failures. The organization owning the oil storage system is responsible for ensuring that the monthly inspections are performed.

A monthly visual inspection checklist is provided in **Appendix D**. The checklist is used for all monthly visual inspections for oil storage systems greater than or equal to 55 gallons and is derived from the aforementioned STI inspection standard. Appendix D defines and details the inspection frequency for generators and mobile fuel tanks. Completed inspection checklists are to be retained for three years and made available for audit by MEMD. Every year, MEMD audits the oil operations program in accordance with the Oil Operations Compliance Assessment Plan.

Required periodic inspections also include testing all liquid-level sensing devices (if such a device is present) for proper operation. Liquid-level sensing devices are installed and must be maintained in accordance with the manufacturer's specifications. These items shall be tested in accordance with the manufacturer's recommendation or once annually, whichever one is more frequent. All records of the testing shall be retained along with the inspection logs.

Confirmation of the operation of mechanical overfill protection devices, such as tank-level gauges, shall be conducted during each filling procedure. Other liquid-level devices—such as high or high/high electronic alarms and electronic leak detection sensors on double-walled constructed or skirted ASTs—require annual inspection and confirmation of their operation. Maintenance personnel will test these sensors in accordance with the manufacturer's recommendations. All liquid-level monitoring device inspections will be documented on a monthly basis on the check list found in **Appendix D**.

4.4.1.1 Brittle Fracture Analysis

There are no field constructed tanks at GSFC, therefore, brittle fracture analysis is not required.

4.4.1.2 Tank Testing

Tightness testing is to be performed on all new ASTs prior to introduction into service. Hydrostatic testing, ultrasonic testing or other approved methods of testing existing tanks will be conducted in accordance with the current STI requirements for ASTs. The most recent tests were conducted in 2001 as part of the Tank Engineering Report and the hardcopy report can be found in MEMD files.

Non-destructive integrity evaluations will be performed on ASTs if a deficiency such as corrosion that can impact tank structural function is identified during the periodic visual inspection and whenever repairs are made to the containers. This inspection program is consistent with accepted industry standards and provides an effective means of verifying container integrity.

Formal internal and external tank testing will be performed in accordance with the schedule that is found in the SP001 AST inspection program. The frequency of formal inspections is determined by the category classification of the AST.

4.4.2 Piping

In addition to the aforementioned secondary containment and monthly inspections requirements, integrity testing or regular inspection is required for the underground piping associated with the AST systems found at the physical plant Buildings 24D and 31B. This requirement is met by one of the methods specified in GSFC's Oil Operation Permit issued by MDE.

4.4.3 Bulk Oil Containers

An inventory of ASTs and bulk storage containers used to store oil at GSFC is in **Appendix I**. Bulk oil containers are inspected as part of the AST inspections as previously detailed. Drums are viewed and inspected in well-lighted areas. The STI SP001 standard does not require integrity testing of portable bulk-oil storage containers such as drums or totes.

4.4.4 Transformers and Oil-Filled Operating Equipment

GSFC electrical personnel provide maintenance and oversight of the oil-filled transformers. As previously discussed, oil-filled transformers are highly dependent on having a stable volume of transformer oil present in order to operate. A cursory view of the external portions of the transformers are conducted when maintenance on them is performed.

Operating equipment such as elevators or lifts are maintained by FMD. The units are inspected during routine maintenance. If a leak is detected, it is handled in accordance with the previously discussed procedures. Inspection and maintenance records are retained by FMD for three years.

4.5 Underground Storage Tanks

There are no underground storage tanks at GSFC.

5.0 Training

GSFC personnel involved in the Emergency Response Program are required to be trained based on the duties and functions they perform. The minimum amount of training should include information to assist in the safe and orderly evacuation of other employees in the event of an emergency, proper notification procedures, and building emergency procedures. GSFC personnel are not authorized to take part in actual emergency operations until they have completed the required training program. Outside public response organizations and personnel involved solely in cleanup operations working under the supervision of an ICP-trained individual(s) are not required to meet the requirements of Section 5.2: ICP Training.

Training drills will be conducted on a regular basis to evaluate effectiveness in accordance with GSFC's Emergency Management Plan. The Chief of MEMD and the Emergency Management Officer (EMO), will determine the time and scope of each evaluation. The EMO, or their designee, will document each occurrence of a scheduled exercise to include, date, time, list of participants and lessons-learned synopsis.

5.1 Training Requirements

The training requirements listed below are intended for employees who participate or are expected to participate in emergency release response procedures (as defined in 29 CFR 1910.120(q)(6)):

1. **First Responder Awareness Level:** Required for individuals likely to discover a hazardous substance release. These individuals will initiate an emergency response sequence by notifying the SOC or the Facilities Operations Center of the release. Employees at this level take no further action beyond proper notification of an emergency (29 CFR 1910.120(q) (6)(i)).
2. **First Responder Operations Level:** Eight hours of training or equivalent experience are required for individuals initially responding to a release of a hazardous substance. Employees at this level respond in a defensive manner – contain the emergency from a safe distance (29 CFR 1910.120 (q)(6)(ii)).
3. **On-Scene Incident Commander:** Twenty-four hours of training are required for individuals who will control the incident beyond the first responder awareness level (29 CFR 1910.120 (q)(6)(v)).
4. **Hazardous Waste Site Workers:** Forty hours of training are required for those individuals involved with hazardous substance removal or other activities which may expose or potentially expose workers to environmental and health hazards. The forty hours of training is conducted off-site and three additional days of supervised on-site field experience is mandated. An annual, eight-hour refresher training course is mandatory (29 CFR 1910.120 (e)).
5. **Annual Refresher Training:** Required for all GSFC personnel involved in the Emergency Response Program (29 CFR 1910.120 (q)(8)(i)).

5.2 ICP Training

GSFC incident responders, skilled support, oil-handling personnel and their supervisors are to receive training on the contents of the ICP annually. The ICP course includes the requirements for 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 Plan. This site-specific training program highlights known discharges or failures, malfunctioning components and precautionary measures to be taken. There are three ICP training courses available:

- ICP Training for Oil Handlers and Supervisors
- ICP Awareness Training
- ICP Training for Incident Responders

ICP Training for Incident Responders and ICP Awareness Training is offered online through the GSFC online training tutorial. Online training alternatives are available to employees upon request or as needed. ICP training for Oil Handlers and Supervisors is offered only in the classroom and may be requested from MEMD.

6.0 Emergency Response Plan

This is the Core Plan and a stand-alone document for reference by all GSFC employees and contractors with the responsibility for implementing response to emergencies. The following sections provide important initial response information in a condensed format and address the overall actions that must be taken at the scene of an emergency, from the time of initial discovery until the situation has been mitigated.

The chronological order of the sections is based on the logical sequence of actions that would be performed during an emergency situation at GSFC as follows:

- Discovery
- Initial Response
- Sustained Actions
- Termination and Follow-up Actions
- Incident Documentation

6.1 Discovery

Upon discovery of an oil or hazardous substance release, fire or any other type of emergency, GPR 8710.2 Emergency Management Program (EMP) Plan for Greenbelt, directs all employees to follow the established procedures for reporting emergencies. The main objective for the reporting party is to ensure their safety and the safety of those in close proximity to the emergency. Initial actions taken or information gathered at the scene **MUST** be done in a manner that does not jeopardize the safety and health of the reporting party. From a secure location, the reporting party shall call **911 from GSFC land-line phones or (301) 286-9111**

from all other phones. If a radio is available, notify the SOC on the appropriate Goddard radio talk group as soon as possible after discovery of the situation.

The term “reporting party” in this document refers to the person or persons who first discover and report an emergency situation. The reporting party is required to remain at the scene in a safe location until emergency response personnel arrive so that they can provide information to the responders.

Appendix A summarizes the roles and responsibilities for various GSFC codes and emergency personnel that respond to releases. The SOC gathers the following information from the reporting party:

- Name, code and phone number of the reporting party
- The type of emergency (fire, spill, etc.)
- Location of the emergency
- Any injuries to personnel
- Cause of the emergency (if known)
- For releases:
 - Type/name of material (if known)
 - Physical state (solid, sludge, liquid etc.)
 - Cause of the release (if known)
 - Whether the spill poses potential risk to people, facilities or the environment (if known)
 - Whether the spill has entered any surface waters, drains or sewers

The information gathered will assist the SOC and in turn the Incident Commander (IC) when reaching out to emergency responders. **THE SOC WILL CALL THE LOCAL FIRE DEPARTMENT FOR ALL ACTIVE FIRES AND EXPLOSIONS (including those caused by chemical releases).**

The SOC will announce the emergency using the Emergency Announcement System of the base radio and via the Emergency Notification System (ENS).

6.2 Initial Response

The IC provides the initial response to sustained actions and investigations of emergency situations. The Shift Supervisor or senior on scene member of the Protective Services Division will act as the Incident Commander for GSFC (see **Appendix L** – Emergency Contact Information). The IC will initiate the Incident Command System adopted from the National Incident Management System’s Incident Command System, as outlined in OSHA 29 CFR1910.120 **Appendix C**.

Table 2 - Support and Advisory Personnel at GSFC

Advisory Personnel	Call Sign	Division
Safety Division	Call Sign “Safety” on the safety talk group or request to be paged by the SOC	360
Environmental Support and Spill Remediation	Call Sign “Environmental” on the environmental talk group or request to be paged by the SOC	MEMD
Facilities Support	Call Sign “FOC” or request to be paged by the SOC	FMD

The Incident Command Post location will be determined and established by the IC at the time of the emergency then communicated to responders via the Goddard radio system.

The Emergency Management Office is responsible for coordination with responding public agencies in accordance with GSFC’s EMP. MEMD is responsible for notification of Federal, state and local regulatory agencies for hazardous materials incidents. Notification procedures are included in **Appendix C**.

Spill response equipment maintained at GSFC is detailed in **Appendix G**. The equipment is available to aid in the containment and cleanup of spills that occur at the facility. If the spill requires intervention beyond the on-site capabilities, MEMD uses a spill response contractor who is capable of providing assistance at any time. GSFC employees and contractors who participate in any containment and/or cleanup actions are required to have completed the training outlined in Section 5 of this document. This training outlines the notification and initial response actions to be taken. GSFC employees and contractors are informed through general environmental awareness training of whom to call to initiate response actions in the event of a spill or release. **Spill cleanup is provided only after emergency conditions have been controlled. Only properly trained persons may respond to emergencies.**

6.2.1 External Notification

Regulatory external notifications and reporting regarding releases of oil and materials will be conducted per the procedures outlined in **Appendix C**. Otherwise, release of information is covered by GPR 8710.2 EMP for Greenbelt.

6.2.2 Federal/State Agency Notification

MEMD will coordinate and make required notifications to Federal, state, and local environmental regulatory bodies, including, but not limited to, the National Response Center and MDE. General procedures for the notification of government agencies are included in **Appendix C**.

6.3 Sustained Actions

The IC will remain in command of the scene until imminent hazards have been resolved. Once the hazards are controlled, the IC may release the scene to MEMD for remediation,

environmental monitoring and/or to Safety for a required mishap investigation. **Appendix F** contains Spill Cleanup Procedures.

6.4 Termination and Follow-up Actions

MEMD is responsible for all on-going remediation and coordinating environmental follow-up actions. MEMD may draw upon resources deemed necessary to implement control of the situation in accordance with laws, regulations and center procedures. MEMD will coordinate subsequent activities after the initial emergency response has ended.

MEMD will coordinate environmental follow up action, including making the proper notifications and coordination with outside regulatory agencies, completing remediation actions and/or long-term monitoring when appropriate.

6.5 Internal Spill Documentation

A spill report is required after response to a spill. The report becomes the official record. As a minimum, the report shall include:

- a. Location of the incident;
- b. Date and time when the incident occurred;
- c. Detailed description of the incident or emergency. This may include pictures and/or a site sketch showing the location of the release and any pertinent features (such as storm drains or water bodies) if they are helpful to understand the details;
- d. A description of the cleanup, remedial actions taken, and the disposition of spent materials;
- e. A preliminary incident investigation as to the cause of the incident; and
- f. Depending upon the severity of the incident, additional information may be required (e.g., a work plan).

6.6 Compliance with 40 CFR109.5 (d)(5)

Appendix K summarizes the Oil Spill Contingency Plan (OSCP) regulated bulk storage units and the oil-filled equipment found at GSFC. It reflects the potential for the unit to fail and its anticipated volume of release, the direction of flow and toward which drainage basin any free oil would flow. A drainage basin is a physical feature of the site where surface water flows toward due to topography, the amount of impervious surface and soil types present. The Drainage Basin figures (**Figures 11 and 12**) provide a visual representation of the information provided in the table.

GSFC estimates that the worst case scenario for an oil release would occur from one of the oil-cooled transformers that is not located within a secondary containment system. Of the stand-alone transformers, the unit located to the northwest of Building 90, poses the greatest risk of having oil reach a waterway at GSFC. The transformer contains approximately 250 gallons of transformer oil and is located at a higher elevation than the nearest water body. The transformer is located approximately 500 feet from the water body. If the transformer oil were to leak

catastrophically and travel in one direction, approximately ten-foot oil-only absorbent booms and 25 bales of sorbent pads should be enough to prevent the material from reaching the body of surface water. Once the release has stopped advancing, two back hoes, an excavator and 15 laborers would be required to remediate the impacted area.

7.0 Communication

GSFC maintains a communication system in accordance with GSFC's EMP. The Emergency Notification System (ENS) is the secondary form of communication, which facilitates communication via text message or email in accordance with 227-WI-8700.0.1- Emergency Notifications.

7.1 Emergency Contact Information

Appendix L lists the contact information for internal and external qualified emergency coordinators. The primary emergency coordinator is the IC. No home address or telephone contact information is provided for the IC. The IC is a 24 hours per day, 7 days a week, on-site position, not a specific person. As per GPR 8710.2, the Emergency Management Officer may serve as the IC if required during an emergency.

8.0 Hazardous Materials and Wastes

GSFC uses chemicals in various quantities for operational missions on the Center. Materials stored above the Emergency Planning and Community Right-to-Know Act (EPCRA) Threshold Planning Quantity (TPQ) are reported via the Tier II report for GSFC. A copy of the most recent Tier II report as of the date of this Plan certification can be found in **Appendix J**.

Under COMAR and Federal regulations, hazardous materials and wastes, require special storage and engineering controls along with regular inspections for container integrity, spills and overall compliance. Management activities for hazardous waste are contained in GPR 8500.3 – Waste Management.

8.1 Hazardous Materials Management

GSFC employs a hazardous materials management database for managing hazardous materials and wastes information. The database is the official repository for all Safety Data Sheets (SDS) at GSFC. These documents can be viewed online through the center's designated web page. A copy of the SDS is uploaded to the database whenever a new material is received at GSFC. GSFC captures specific data points for the management and reporting of the center's storage and use of hazardous materials and subsequent generation of hazardous wastes. During an emergency situation, the SOC, has the ability to access the chemical database and identify what materials are located in any given room.

8.2 Hazardous Materials Storage

The areas within Building 27A that store hazardous materials are properly ventilated and illuminated. Accidental releases would be contained within the building and would not cause immediate harm to the environment.

8.3 Hazardous Waste Storage

GSFC uses a variety of chemicals, some in large quantities, for operations on center. Hazardous waste are generated throughout the Center and transferred to the less-than-90-day facility (Building 27A) for proper management.

GSFC main campus is classified as a Large Quantity Generator (LQG). A LQG generates more than 1,000 kg. of hazardous waste per calendar month. Hazardous wastes are accumulated at multiple Satellite Accumulation Areas (SAAs) throughout GSFC near the points of generation. According to RCRA regulations, up to 55-gallons of waste (or 1 quart of acutely hazardous waste as defined by U.S. EPA) may be accumulated before being transferred to the hazardous waste less-than-90-day facility.

8.3.1 Remote Waste Accumulation

GSFC has three off-site locations that generate small amounts of hazardous waste: Areas 200, 300 and 400. All three locations generate fewer than 220 pounds of hazardous waste monthly. The State of Maryland classifies these three locations as Small Quantity Generators (SQG). If their generator status changes, the areas will comply fully with the applicable regulations.

8.3.2 Less-Than-90-Day Facility, Building 27A

The storage area at Building 27A is designed and engineered to comply with Federal requirements for hazardous waste storage containment building. A diagram of this building is in **Figure 13**. The building is constructed with concrete masonry units (CMU) and a brick veneer. The building consists of the following areas:

- 1) A 29-foot by 46-foot open bay provides three sunken storages areas segregated by CMU walls and three sunken 9-foot by 13-foot chemical storage rooms. The bay also provides an aisleway between the storage areas, a staging area and a loading dock.
- 2) Storage consists of two, 12-foot by 14-foot chemical storage rooms; a 9-foot by 9-foot chemical storage room, a small general storage room, a connecting hallway and a second loading dock. Each room has a blind sump to prevent liquids from leaving the room.
- 3) There is a decontamination area in the back of the building with a slop sink that is connected to the sanitary sewer system. There is also a functional fume hood for investigating and handling materials requiring ventilation.
- 4) An administrative area consists of a lavatory, an office and a supply storage room. These rooms have independent heating, ventilation and cooling systems.

- 5) The rest of the building relies on a heat exchange system located on the roof. Roof fans provide ventilation, from the floor level, to each room where wastes or chemicals are stored.
- 6) Potable water and sanitary sewage are provided to the administrative area, loading dock and the decontamination area. A pressurized water sprinkler system provides fire protection for the entire building.
- 7) Electrical and lighting systems are provided to the administrative and chemical storage areas. All electrical fixtures serving flammable and combustible waste and material transfer areas are intrinsically safe and comply with all building codes and standards. The office has telephone and computer connections.
- 8) An emergency eyewash/shower unit, fume hood, fire alarm pull-box and spill sorbent materials are contained within the building.

8.3.3 Building 27A Engineered Spill Prevention and Control

Engineered spill prevention and control for Building 27A includes the containment and spill prevention features previously described in this section. The spill prevention methods and systems employed are appropriate for the hazards of the wastes being stored, the type of storage containers and the associated volume. Each room and container therein is inspected and documented in accordance with 40 CFR 262.17. Visual inspections of each room are performed on a more frequent basis. In the event that alternative waste containers are needed (e.g., a tank system) the spill prevention, control and inspection requirements will be assessed and updated as needed.

8.3.3.1 Structural

- 1) Floors – The floor at Building 27A is a concrete slab that has been constructed to create a low blind sump area to handle possible spills releases. The slab is elevated at the entrance to create the loading dock elevation of 4-feet above the pavement. The foundation is provided by a combination of strip footings in some areas and a turndown slab at other areas. The floor is coated with a non-skid epoxy surface.
- 2) Walls – All walls, including partition walls are of CMU construction. Exterior walls are veneered with standard modular brick face.
- 3) Roof – Building 27A has a metal roof deck covered with a modified bitumen roofing membrane. Steel joists provide the typical roof framing, the steel roof deck is attached to the joists.

8.3.3.2 Mechanical

- 1) Heating Ventilation and Air Conditioning – The office, lavatory and office supply storage room are served through the wall electrical air-handling unit. The connected lavatory has a wall exhaust. A fume hood was installed in the decontamination room in 2008 and is vented to the outside.
- 2) Staging Area – The staging area has weather stripping installed at the front of the loading dock. This space is not climate controlled.

- 3) Storage areas – The waste storage areas are served by a metal ducted heating system. They are exhausted by dedicated fans, which exhaust from the floor, located on the roof.
- 4) Fire Protection – The building utilizes a pressurized water sprinkler system for fire protection. The system is supplied by a 4-inch riser that enters the building through the mechanical room adjoining the west loading dock. This line serves the overhead system in all areas of the building, including the open bay area of the loading docks.

8.3.3.3 Electrical

- 1) Power Distribution System – The existing power distribution system consists of two breaker panels. One panel is located in the mechanical room adjoining the west loading dock, and the other is in the office. Power is provided by means of an underground cable running from a 150 kVa transformer at Gate 10. These panels provide power for all electrical operations at the building.
- 2) Lighting System – The lighting in the building is pendant mounted fluorescent fixtures.
- 3) Communication Systems – There is a land telephone line and computer network connections in the office. There are four manual pull stations throughout the building.
- 4) Bonding and Grounding System – This allows metal drums to be bonded to the building's grounding system to minimize the potential of a static spark in the bulk flammable storage area.
- 5) Lightning Protection – This building is not equipped with a lightning rod or any lightning protection system.

8.3.4 Operational Spill Prevention and Control

In addition to the engineering controls, GSFC maintains this plan as the primary tool to define operational controls for the management of oil and hazardous waste accumulation operations. Maps and figures developed for oil spill control may be used in the event of a non-radiological hazardous substance release at GSFC, see Section 6 of this document.

For more information regarding GSFC's hazardous waste management procedures refer to 250-PG-8500.3.3 –Less-than 90-Day Waste Accumulation Facility and Program Procedures.

8.3.5 Inspections and Maintenance

MEMD maintains the records and conducts weekly inspections of Building 27A as mandated by COMAR 26.13.06.02(E) and 40 CFR 267.1101(g).

Appendices

Appendix A - Release Roles and Responsibilities

Emergency Action Procedures

Release Incident Response

This appendix summarizes the roles and responsibilities for the various codes during a release at GSFC.

A1.0 Initial Notification

	Responsibility for Action	Action
<input type="checkbox"/>	Employee/ Facility Operations Manager (FOM)/ or Floor Warden (FW)	(On-Scene) <ul style="list-style-type: none"> • Evacuate affected area, as warranted. • Determine if any persons are injured. • Notify/Verify that SOC 911 has been notified.
<input type="checkbox"/>	FOC	<ul style="list-style-type: none"> • Notify SOC of spill location/alarm status.
<input type="checkbox"/>	SOC	<ul style="list-style-type: none"> • Obtain initial information from on-scene caller or FOC. • Notify IC, as necessary.

A2.0 Dispatch

Notification entails issuing an alert via radio, sending a text message through the ENS, and placing a voice call to the on-call cellphones.

If groups do not respond within **20 minutes of initial notification**, the SOC/FOC will re-send alerts. If no response is received within 10 minutes after the second alert and a response is required (based on incident), SOC/FOC will notify the appropriate civil servant supervisor until positive contact is made.

	Responsibility for Action	Action
<input type="checkbox"/>	SOC	<ul style="list-style-type: none"> • Dispatch Patrols (Supervisor/officers).
<input type="checkbox"/>	SOC	<ul style="list-style-type: none"> • Page and call HAZMAT ENS Group (24/7): Safety/Industrial Hygiene, Environmental, Emergency Management.
<input type="checkbox"/>	FOC	<ul style="list-style-type: none"> • Sound alert tones/radio: Safety/IH, Environmental/Operations and Maintenance, Building Managers (24/7).
<input type="checkbox"/>	Safety/IH, Environmental, FOMs, O&M, Emergency Management	<ul style="list-style-type: none"> • Confirm FOC radio/phone call during working hours or SOC phone page after hours.
<input type="checkbox"/>	FOC	<ul style="list-style-type: none"> • Notify SOC of radio/telephone page by Safety/IH, Environmental, O&M.

A3.0 Initial Response

	Responsibility for Action	Action
<input type="checkbox"/>	Incident Commander (IC)	Assess the situation, establish ICP, assembly/evacuation areas and triage as necessary (all in upwind location).
<input type="checkbox"/>	IC	Notify SOC to call 911 for medical issues associated with the HAZMAT incident.
<input type="checkbox"/>	Safety/IH, Environmental, Emergency Management, FOM and O&M	Environmental, Emergency Management, FOM and O&M to respond to the scene (all calls).

	Hazard	Action
<input type="checkbox"/>	<u>UNKNOWN HAZARD</u>	<ul style="list-style-type: none"> Follow the setback distance established in the DOT Emergency Response Guidelines (ERG).
<input type="checkbox"/>	<u>KNOWN HAZARD</u>	<ul style="list-style-type: none"> Room and/or area containing the spill shall be isolated and all non-hazmat trained personnel removed to beyond the SDS recommended perimeter. The degree and extent of the evacuation will be dependent upon the nature of the material(s) released.

A4.0 Incident Action Plan: Response/Recovery

	Responsibility for Action	Action
<input type="checkbox"/>	IC	Conduct briefing: have all individuals/groups provide information, as appropriate, including employee who notified 911/FOM.
<input type="checkbox"/>	IC	Develop an Incident Action Plan (IAP) with input from all groups. If no/limited response from HAZMAT Notification group, the IC will assess the situation. If an emergency exists, IC will have SOC call external resources.

A5.0 Determination if the Emergency can be Transitioned to a Controlled Situation or Non-Emergency

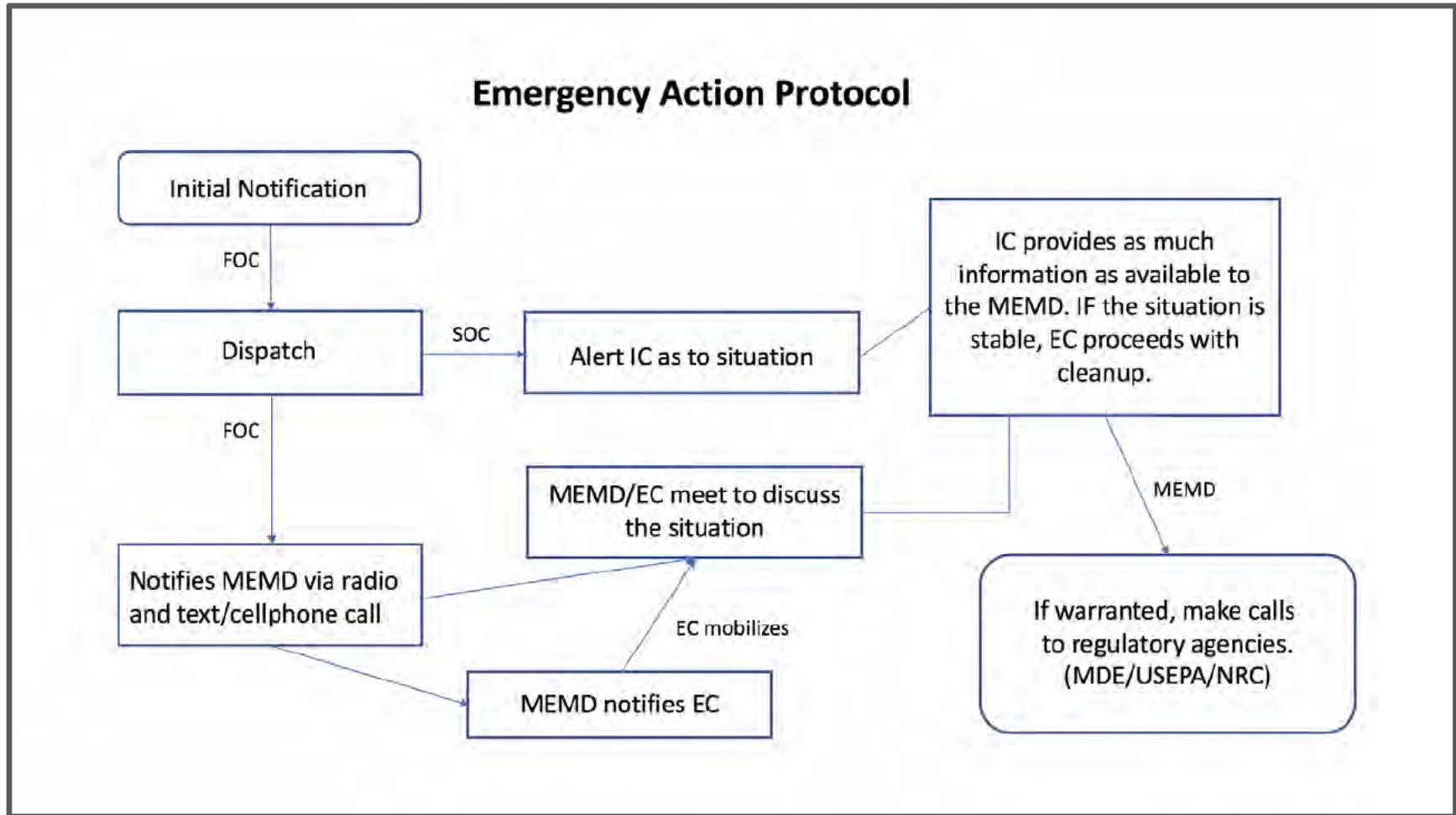
Situation	Description	Action
Emergency	<ul style="list-style-type: none"> If, without rapid action, personnel or property are in imminent danger. The release cannot be contained. 	Request the Prince George’s County Fire Department (PGFD).

	<ul style="list-style-type: none"> • Personnel exposure to a known or potentially unknown hazard (especially if signs or symptoms of exposure exist). • Unknown potentially hazardous materials are present (if there is no imminent danger, time to assess and evaluate the situation can be increased). 	
Controlled Situation	<ul style="list-style-type: none"> • No imminent danger to people, property or mission exists. • Hazards/materials are contained (no flow). 	There is time to evaluate the situation and gather information.
Non-Emergency	If no emergency exists and the release is controlled.	Continue to assess the situation to ensure that the scene is safe.

A6.0 Incident Action Planning (IAP) Responsibilities/Objectives

Responsibility for Action	Action
IC	<ul style="list-style-type: none"> • Notify SOC to call 911 if the scene is not safe/emergency exists based on input from Safety/IH and environmental, identify specific point of entry for emergency responders and advice at time of initial notification. • Site security. • Act as point of contact for all external agencies/entities <p>Once a group’s IAP objectives have been met, the IC may release them from the scene.</p>
Safety	<ul style="list-style-type: none"> • PPE (respiratory protective/suits/gloves) • Establish perimeter • Verify/validate scene safety for human occupancy (atmospheric/air safe/flammable) • Mishap investigation (make the determination as to whether situation needs to be handled by better equipped professionals)
Environmental	<ul style="list-style-type: none"> • Regulatory compliance/reporting/site remediation if site has been deemed controlled/non-emergency
Facilities	<ul style="list-style-type: none"> • Crowd control, utility energize/de-energize
FOM/FW	<ul style="list-style-type: none"> • Building expertise, crowd control per the BEP
Emergency Management	<ul style="list-style-type: none"> • For major/multiple incidents and or disaster: Activate EOC as directed by Code 200 Management Operations. EOC, once activated assumes IC responsibilities.

A7.0 Emergency Action Protocol



Appendix B - Secondary Containment Release Procedures and Checklist

B1.0 Purpose

Appendix B provides the secondary containment release procedures and checklist to document the discharge of stormwater from secondary containment areas. The checklist shall be completed anytime the precipitation contents from secondary containment dikes are discharged.

B2.0 Scope

This procedure applies to **all secondary containment** locations at any GSFC building (either inside or outside).

B3.0 Procedures

These procedures must be followed each time the stormwater is to be discharged from a secondary containment area. Only non-oily water can be discharged. All the questions on the attached checklist must be answered in their entirety before discharging from secondary containment.

If applicable, ensure that the drain valve is in the closed or locked position. When not in use, secondary containment units must be kept in the locked position. If no drain valve is present, enter “N/A” on the checklist.

Visually inspect the secondary containment area for the presence of petroleum sheen.

If there is an oil sheen observed, do not discharge the contents of the secondary containment. Notify MEMD immediately. Even though there has not been a release to the environment, in order to initiate a 24/7 environmental response, call 911 on a GSFC telephone or dial (301) 286-9111 from any other phone. You must document the fact that there is oil/water mix on the checklist. Estimate the volume in gallons of water (1 cubic foot of water = 7.48 gallons).

You must attempt to identify the source of the oil on the stormwater. Look for any potential leaks or the obvious signs of material or equipment failure. Indicate your checking on the checklist.

If there is no oil present, you may discharge the contents. Calculate the volume to be released, and indicate the amount on the checklist.

You must have a witness that there is no oil present on the stormwater. Their initials must appear on the release checklist.

B4.0 References

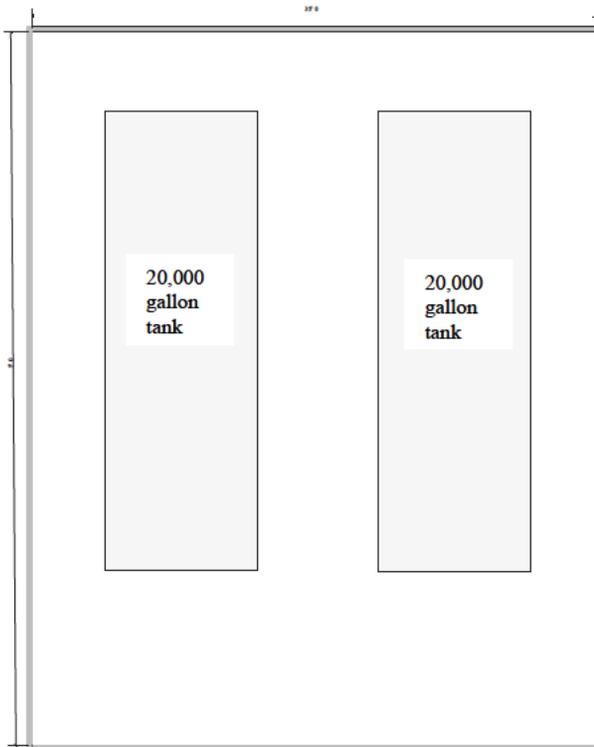
- a. 40 CFR112.7 (a)(3) Oil Pollution Prevention
- b. 40 CFR112.8 (c)(3) Spill Prevention Control and Countermeasure Plan requirements for on-shore facilities (excluding production facilities)
- c. GSFC Oil Operations Permit

SECONDARY CONTAINMENT RELEASE CHECKLIST

Tank ID: _____ Tank Location: _____ Date: _____

<p>This checklist documents the proper discharge of stormwater from secondary containment. If there is oil in the secondary containment, DO NOT DISCHARGE the contents. Any oil release to <u>secondary containment</u> must be reported to MEMD by calling 911 from a GSFC telephone or by dialing (301) 286-9111 from any other phone.</p>								
Inspection Items								
The drain/valve is in the closed position. (Y/N)								
Estimated volume of water to be discharged.								
Is there an oil sheen on the water? (Y/N)								
If there is a sheen, when was MEMD notified? (Time/Date)								
Was the drain/valve returned to the closed position after draining (if applicable)? (Y/N)								
Witnessed By:								
Discharged by:								

Building 31 Secondary Containment Calculations



Secondary Containment = Total Volume of Secondary Containment minus support structures and the intersection of any tank volume and secondary containment volume
Unadjusted volume of secondary containment = $35' \times 43.92' \times 2.5' + \frac{1}{2} 35 \times 43.92 \times .42' = 3,843 \text{ cf} + 322.81 \text{ cf} = 4,173.16 \text{ cubic feet}$

Volume of Concrete Pad = $11.67' \times 5.5' \times 2.08 + 11.33 \times 1.75 \times 2.08 \times 2 + 8.58 \times 3 \times 2.08 + .58 \times .92 \times 3 \times 6 = 133.5 + 82.48 + 17.87 + 9.6 = 243.45$

Volume of Concrete Stairs = $5 \times .58 \times .92 \times 10 = 26.68$

Partial Volume of 20,000 gallon tanks (2)

(<http://grapevine.abe.msstate.edu/~fto/tools/vol/parthcylinder.html>) Radius = 6' Height (on diagram) = 1.96' Length = 23.67' = $284.84 \text{ cf} \times 2 = 569.68 \text{ cf}$

So, Secondary Containment = $4,173.16 \text{ cf} - 243.45 \text{ cf} - 26.68 \text{ cf} - 569.68 \text{ cf} = 3,333.35 \text{ cubic feet}$

Volume of 20,000 gallon tank (1 gallon = .1133681 cubic feet) = $20,000 \times .1133681 = 2,267.36 \text{ cf}$

Volume plus 10% = $2,267.36 \text{ cf} \times .11 = 2,494.1 \text{ cubic feet}$

Volume plus 100 year storm (25 year, 24 hour rainfall, Reference:

http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=nc) = $2,267.36 + 1,537.2 \times .52 = 3,066.6 \text{ cubic feet}$

Building 24 Secondary Containment Calculations

Secondary Containment = Total Volume of Secondary Containment minus support structures and the intersection of any tank volume and secondary containment volume
 Unadjusted volume of secondary containment = $((58.5' \times 87.25') - (15' \times 35')) \times 2.375' + \frac{1}{2} ((58.5' \times 87.25') - (15' \times 35')) \times .292' = (5,104.125 \text{ sf} - 525 \text{ sf}) \times 2.375' + \frac{1}{2} \times 4,579.125 \times .292' = 4,579.125 \text{ sf} \times 2.375' + 668.55 \text{ cf} = 10,875.42 \text{ cf} + 668.55 \text{ cf} = 11,556.71 \text{ cubic feet}$

Volume of 50,000 gallon tank supports = $1 \times 11.66 \times 2.833 = 33.03 \text{ cf ea} \times 15 = 495.49 \text{ cf}$

Volume of 2,000 gallon tank supports = $1 \times 5 \times 1.75 = 8.75 \text{ ea} \times 2 = 17.5 \text{ cf}$

Partial volume of 2,000 gallon tank

(<http://grapevine.abe.msstate.edu/~fto/tools/vol/parthcylinder.html>) Radius = 2.67' Height (per diagram) = .08' Length = 12.08' = .84 cf

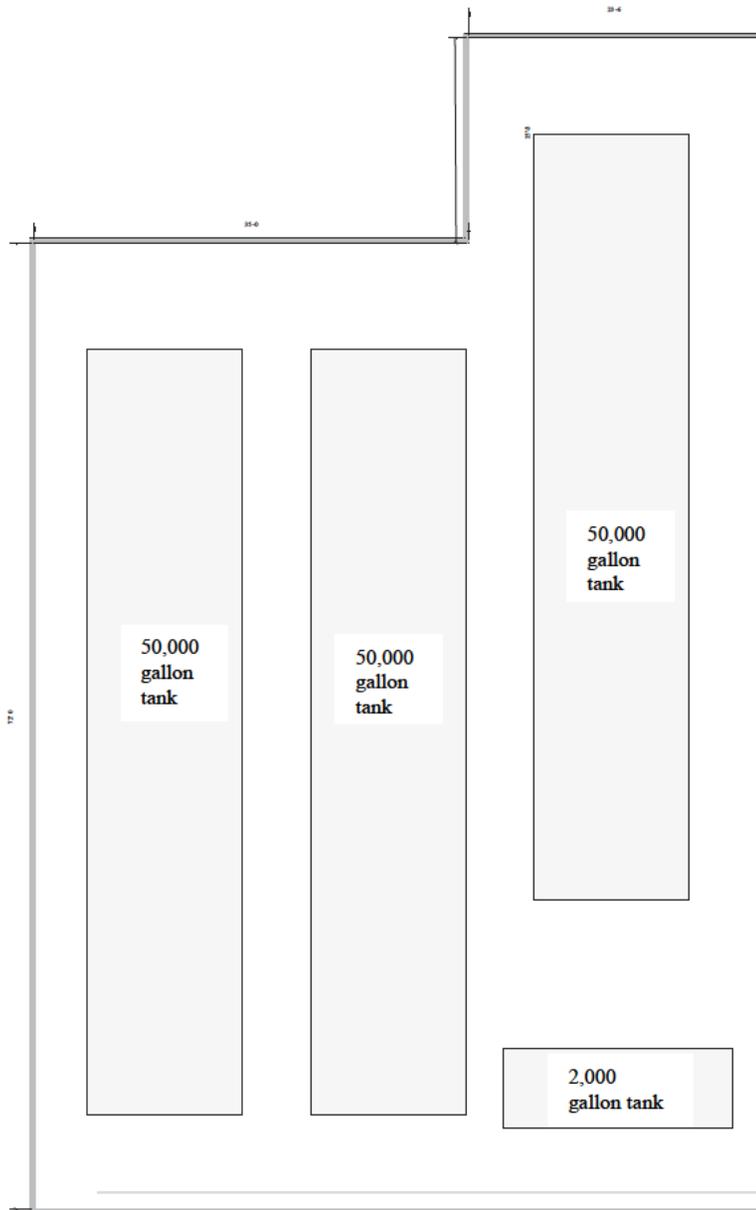
So Secondary Containment = $11,556.71 - 495.49 - 17.5 - .84 = 11,042.88 \text{ cf}$

Volume of 50,000 gallon tank (1 gallon = .1133681 cubic feet) = $50,000 \times .1133681 = 5,668.4 \text{ cf}$

Volume plus 10% = $5,668.4 \text{ cf} \times .11 = 6,235.25 \text{ cubic feet}$

Volume plus 100 year storm (100 year, 24 hour rainfall, Reference: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=nc) = $5,668.4 + 5,456.125 \times .52 = 8505.59 \text{ cubic feet}$

Note: Calculations do not include tank piping



Appendix C - External Spill Notification Procedures

FOR GSFC MEMD USE ONLY

C1.0 Purpose and Scope

This procedure defines the notifications to be made to external agencies in the event of an oil release or a hazardous substance release (including releases to air). The procedure applies to any oil/hazardous substance release on/from GSFC property and is for MEMD use only.

C2.0 References

- a. General requirements for Spill Prevention, Control and Countermeasure Plans 40CFR112.7 and COMAR 26.10.01 – 09.
- b. Contingency Plan and Emergency Procedures, 40CFR262 Subpart M and COMAR 26.13.05.04
- c. Hazardous Waste Operations and Emergency Response 29CFR1910.120
- d. GSFC Oil Operations Permit 2014-OPT-3356

C3.0 Contact Information

The following table contains the contact information for key Federal, state, and local agencies for releases above the reportable threshold volume.

TABLE 1 – STATE AND FEDERAL CONTACT INFORMATION

AGENCY	ADDRESS	PHONE NUMBER	TYPE OF EMERGENCY TO REPORT
MDE, Emergency Response Program	1800 Washington Blvd. Baltimore, MD 21230	(866) 633-4686 24 hr.	<ul style="list-style-type: none"> • Any oil spill or release greater than or equal to 60 gallons • Chemical releases in excess of the reportable quantity (RQ) • Releases to the environment that cause a fish kill, injuries to wildlife or endanger waters of the State of Maryland • Public sewer leaks/overflows
National Response Center	c/o USCG 2100 2 nd St. SW, RM 2611 Washington, DC 20593	(800) 424-8802 24hr.	<ul style="list-style-type: none"> • Any size oil spill that enters the waters of the State • Chemical release in excess of the RQ for the released material
WSSC	14501 Sweitzer Lane Laurel, MD 20707	0815-1700 (M-F): (301) 206-8553 All other times (301) 206-4002	<ul style="list-style-type: none"> • Oil or chemical spills released into the sanitary sewer
USEPA Region III	1650 Arch Street Philadelphia, PA 19103	(800) 438-2474	<ul style="list-style-type: none"> • Any chemical spills and/or releases above the RQ for the compound • Releases to the environment that cause fish kills, injuries to wildlife or endanger waters of the State.

C4.0 Instructions

The following steps outline the notification procedures for contacting outside agencies. **MEMD WILL COORDINATE ALL CORRESPONDENCE WITH REGULATORY AGENCIES.** This section is organized by the type and size of releases. The templates that follow this section are intended to assist with telephone reporting and official documentation. The telephone report is not an official document; it is intended to assist the reporting party with providing information to the outside agency. The MDE form is an official reporting form. The telephone reporting template cannot be used in lieu of the MDE form.

C4.1 Oil Spills fewer than 6 gallons

Oil discharges of 6 gallons or fewer in an area not likely to pollute waters of the State, which have been expeditiously contained and removed, notify the Environmental Support Contractor (ESC) at internal (6-8874) or by radio “EC” to assist with the cleanup. No reporting to MDE is required.

C4.2 Oil Spills Between 6 and 60 gallons

For any spill more than 6 gallons but fewer than 60 gallons in an area not likely to pollute waters of the State, which have been expeditiously contained and removed, notify ESC at internal (6-8874) or radio call “EC” to assist with cleanup. A written record of the spill must be kept for inspection by MDE if requested. The spill reporting database serves as the repository for this information. The following information is required for the record:

- Date of discharge
- Location
- Type of product discharged
- Quantity discharged
- Cause of the discharge
- Final disposition and date

C4.3 Oil Spills Greater than 60 gallons

- 1) Notify MDE Emergency Response program immediately, but not later than two (2) hours of discovery (see above for notification requirements) at (866) 633-4686 and provide the following information (Note: The telephone reporting template can be used to assist with documenting this information):
 - a. Time of discharge
 - b. Location of discharge
 - c. Type and quantity of oil
 - d. Is assistance required
 - e. Name, address and telephone number of the person making the report

- f. All other pertinent and necessary information requested by MDE
- 2) Complete the MDE Spill Incident Report (at the end of this section); and
- 3) Submit a copy by email and mail a copy of the completed report to MDE Oil Control Program within 10 days.

C4.4 Monthly Reporting for All Spills Between 6 to 60 Gallons

A written report documenting each spill greater than 6 and fewer than 60 gallons in an area not likely to pollute waters of the State, which have been expeditiously contained and removed, shall be submitted to MDE Oil Control Program no later than 15 days after the end of the month. The monthly report must include the following data:

- Date of the release
- Location
- Type of material
- Quantity
- Cause of release
- Final disposition and date

C4.5 Oil Spill into Surface Waters

Section 311(b)(4) of the Clean Water Act (codified in 40 CFR 110) states that discharges of oil in such quantities as may be harmful to public health or the environment include oil discharges that (1) violate water quality standards, (2) cause a film, sheen or discoloration of the water, or (3) cause a sludge or emulsion to be deposited beneath the surface of the water. **If the facility has had two discharges of oil of 42 gallons (1 barrel) or more or has discharged 1,000 or more in a single incident, then the NRC must be notified regardless if the three aforementioned conditions are met.**

- 1) If you must notify the NRC, the following information must be provided:
 - The exact address and phone number of the facility
 - The time and date of the discharge
 - The type and estimated quantity of material released
 - The source and exact location of the release
 - A description of the impacted media
 - The suspected cause of the discharge
 - Any damages or injuries caused as a direct result of the discharge
 - Actions being taken to stop, remove or mitigate the effects of the release
 - Whether an evacuation is warranted
 - The names of individuals and/or organizations who have also been contacted
 - Is assistance required
 - Name, address and telephone number of person making the report
 - Any other information as requested

2) Notify MDE and follow the procedures outlined in Section 5.2

C4.6 Oil or Hazardous Materials Spill into the Sanitary Sewer

Contact the WSSC at (301) 206-8553 (after 1700: (301) 206-4002). Note: The telephone reporting template can be used to provide the necessary information. Complete all reporting requirements as listed in GSFC's Discharge Authorization Permit.

C4.7 Hazardous Substance Release above Reportable Quantity

Reportable quantities (RQ) vary from compound to compound, so it is essential to know exactly what has been released. Once it has been verified that a release has occurred in excess of a given RQ, MEMD will contact the following:

- NRC: (800) 424-8802
- MDE: (866) 633-4686
- LEPC: (301) 324-4400

GSFC will file the necessary spill reports with all applicable authorities

C4.8 Hazardous Substance Release below RQ

1. For a hazardous substance releases below the RQ and that do not pose a threat to the waters of the state, people or the environment. MEMD shall complete a spill log entry for the release.

C4.9 Unpermitted Release to the Sanitary or Storm Sewer Systems

For any unpermitted release to the sanitary or storm sewer systems, MEMD shall notify MDE and/or WSSC in accordance with Table 1. Written reports are due to WSSC within 5 calendar days and MDE upon request.

C4.10 For Oil Spills/Hazardous Releases After the Emergency is Controlled

A written report to MDE may be required depending upon volume. See previous sections for specific notification instructions.

C5.0 Telephone Reporting Template

The following template can be used for telephone reporting.



NASA/GSFC
8800 Greenbelt Rd
Greenbelt, MD 20771

1. Person who discovered the spill: _____ Telephone #: _____

2. Approximate location and type of incident (e.g. fire, explosion, release):

3. Time incident discovered _____ Date: _____
Is the incident contained? _____ Date: _____

4. Quantity and type of material released:

5. Assistance Required:

6. Corrective Actions taken or to be taken:

Name of person submitting report: _____ Date: _____ Time: _____

Appendix D - Monthly Inspections Procedures and Checklist

D1.0 PURPOSE

This appendix provides the inspection procedures and checklist to document the required monthly inspection of all oil storage systems with a shell capacity equal to or greater than 55 gallons.

D2.0 SCOPE

This procedure applies to all bulk oil storage containers with a shell capacity equal to or more than 55 gallons including ASTs, drums, generators, and mobile fuel tanks. Oil filled equipment (e.g., electrical transformers, hydraulic lift tanks) are not considered to be a bulk storage unit and as such are not covered by the following procedures.

D3.0 REFERENCES

- a. 40 CFR 112.8(d)(4), Oil Pollution Prevention.
- b. COMAR 26.10.01.12B (5), Oil Pollution and Tank Management.

D4.0 PROCEDURES

Inspections shall be conducted monthly and documented using the inspection checklist at the end of this procedure. For oil drum storage areas, one checklist can be used for all drums in the area.

1. Record the level of fuel in the tank or the aggregate capacity of drums observed at time of inspection under "Fuel Level."
2. Date and initial the checklist.
3. Inspect the tank/drum shell, paying close attention to rust spots, dents, and welds, etc., where leaks may be present. Check the appropriate box if the condition of the tank and/or drum is in good condition. Good condition means that there is **no evidence** of leaks, evidence of corrosion, or other structural problems with the tank or drum shell.
4. Look at any pipes or nozzles associated with the tank or drum, if applicable. Place a check in the appropriate box if the condition of the tank and/or drum pipes and nozzles are in good condition. Good condition means that the pipes and nozzles are in good structural condition and there is no evidence of leaks present.
5. Look at the secondary containment around the tank and/or drum area, if applicable. Place a check in the appropriate box if the secondary containment is in good condition. Good condition means that the structural integrity of the containment area is structurally sound (e.g., without cracks, peeling paint), is capable of containing a release, and that the containment area is free of water or debris.
6. Look around the oil storage area and note if the area is kept clean and orderly.
7. Observe the area around the oil storage area and note if there is any evidence of leakage or spills.
8. Review tank logbook and note if there are gauging records for each time fuel was added to the bulk storage unit. **If there are no prior gauging records because oil was not transferred, check no and record in the "Notes" section that no transfers have taken place since last**

- inspection, to show that you considered this question.
9. If applicable, test the overfill alarm in accordance with manufacturer's specifications and indicate if it is working properly.
 10. For all double walled tanks, check the interstitial space of double-walled constructed tanks for the presence of liquid. For tanks that have basin drains, slowly twist out and remove the drain plug to determine if liquid is present. For tanks that do not have drain plugs, test (in accordance with manufacturer's specifications) the float ball, rod, or sensor on an annual basis as a minimum to confirm proper operation and actuation of an alarm.
 11. Record any observations or notes in the last column of the checklist. If any of the previous boxes were unchecked (unless the question was not applicable), use this space to document why the box was unchecked. If a leak to the environment is found during the visual inspection, immediately report the release to the SOC by calling 911 from Center phones, (301) 286-9111 from a cell phone, or radio the SOC from a Goddard-issued radio. Any oil release to secondary containment must be reported to MEMD by calling 911 from a GSFC telephone or by dialing (301) 286-9111 from any other phone.
 12. Note any maintenance performed on the unit since the last inspection, including corrective actions taken as a result of this inspection. All work performed on any tank must be done by the manufacturer. If there is any question as to what constitute work on the tank and standard maintenance, contact MEMD for assistance.
 13. Document corrective actions to be taken in the "Notes" section if any inspection items were found to be unsatisfactory.

D5.0 RECORDKEEPING

Inspection records shall be maintained by the tank owning organization for at least three (3) years as required by 40 CFR 112.7(e), and be accessible for random inspections.

D6.0 ALTERNATIVE PROCEDURES FOR BUILDING 27A

Inspections of oil storage systems with a shell capacity of 55 gallons or more located in the drum storage area at the building 27A, less-than 90-Day Waste Facility, will be conducted and documented concurrent with the weekly RCRA inspections.

GSFC ICP Monthly Inspection Checklist

Tank/Oil Storage Area Number: _____ Visit <https://itcdsp13.gsfc.nasa.gov/sites/EMS/ICP/SitePages/Home.aspx> to verify that this is the correct version.

Inspection Date MM/DD/YYYY	Fuel Level	Tank/Drum in good condition	Pipes/ Nozzle in good condition (if applicable)	Secondary Containment in good condition (if applicable)	Area is clean and orderly	Spills identified or observed near the tank or drum	Overfill alarm working properly	Liquid in the interstitial space	Notes and/or Maintenance Performed
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
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Use N/A for any question that is not applicable.

Appendix E - Oil Transfer Procedures and Checklists

Oil Transfer Procedures and Checklists

E1.0 PURPOSE

This procedure describes the requirements to ensure that bulk oil transfers at GSFC are managed to aid in the detection of problems or issues (such as spillage, over-fill, leakage, etc.) that may contribute to a spill or release of oil to the environment.

E2.0 SCOPE

This procedure applies to any bulk oil transfer at GSFC. It has been developed to meet the requirements for oil transfers as set forth in the SPCC regulations (40 CFR 112) and the Maryland Oil Pollution and Tank Management regulations (COMAR 26.10).

E3.0 INTRODUCTION

This procedure must be implemented whenever a tank is filled or oil is transferred from one container to another at GSFC. Inspections and monitoring are important for catching problems before they arise and to prevent major spills or releases. The point-of-contact is responsible for ensuring that bulk oil transfers are completed according to this procedure and that proper documentation is recorded. Section 4 of this Plan provides a table of GSFC-owned and operated SPCC inventory including Aboveground Storage Tanks (AST) that contain petroleum products.

E4.0 COMPLIANCE REQUIREMENTS

During the filling of an AST at GSFC, a designated representative from GSFC must witness the transfer of fuel into the tank. These designated individuals must complete the ICP Supervisors and Oil-Handling Personnel training annually. Upon completion of filling or fuel transfer activities, the person overseeing the fuel transfer shall complete the Tank-Filling Monitoring Checklist and placing it into the Logbook for the associated tank. In addition to the Tank-filling Monitoring Checklist, the fuel delivery driver shall complete the Fuel Level Monitoring Checklist before and after fueling. The fuel delivery slip will also be attached to this checklist. A copy of the Tank-filling Monitoring Checklist and the Fuel Level Monitoring Checklist are included in Section 9 of this procedure. The checklists must be completed for each fuel delivery to any fuel storage tank at the facility. If the checklists are not used to record the fuel transfers, the same information must be written and recorded into the Logbook for the respective tank.

E5.0 PROCEDURES

The responsible GSFC representative shall follow these procedures for all fuel transfers at GSFC.

1. Inform delivery truck driver of GSFC fuel transfer checklists and site specific procedures.
2. A fuel supplier certification must accompany every delivery to the tanks at buildings 24 and 31. This fuel supplier certification shall have the following information:

- The name of the fuel supplier; and
 - A statement that the oil complies with the specifications of 40 CFR 60.41c (15 parts per million for total sulfur content).
3. Ensure delivery truck is equipped with appropriate hoses and appurtenances for the unit that is to be filled. **IF THE VENDOR DOES NOT HAVE THE CORRECT FITTINGS, DO NOT ACCEPT THE LOAD. AT NO TIME WILL MORE THAN A SINGLE FITTING BE PERMITTED DURING A FUEL TRANSFER.**
 4. Ensure that all ignition sources, including cigarettes and cigars, are extinguished, and cell phones are stored in the vehicle cab.
 5. Provide wheel chocks or other physical barrier system to prevent vehicle from departing before complete disconnection of oil transfer lines.
 6. For buildings 24 and 31, ensure that the secondary containment storm drain is closed.
 7. Take the Tank-filling Monitoring Checklist with the fuel truck to the tank to be filled.
 8. Visually inspect the general condition of the tank and transfer equipment/facility prior to filling and departure.
 9. Complete the Tank-filling Monitoring Checklist in this appendix for each fuel delivery to a tank owned/operated by GSFC. Place an “X” or mark in the appropriate box for each item. If a response requires elaboration, do so in the “Description and Comments” space provided. Further descriptions or comments should be attached on a separate sheet of paper or on the back of this sheet, if necessary. Note: N/A – Not Applicable
 10. Calculate the volume inside the tank by manual sticking, then read and compare to the primary fuel level gauge associated with the tank and record the volume on the Fuel Level Monitoring Checklist. If a suitable port is unavailable for manual sticking, a secondary gauge may be utilized. If a secondary method is not available, then the primary tank gauge must be tested. Perform testing of the tank gauge per the manufacturer’s recommendation. Records of tank gauge tests shall be maintained in the tank logbook. **“Pop-up” style gauges may not be used as the primary method to calculate internal tank volume.**
 11. Ensure the driver verifies the volume of fuel in the delivery truck. Ensure that the amount of fuel to be transferred does not exceed the recommended filling capacity of the tank (usually 90% of total tank capacity).
 12. Ensure the driver records the following information on the Fuel Level Monitoring Checklist:
 - Date
 - Time
 - Fuel level from primary gauge
 - Fuel level from manual sticking or secondary gauge
 - Maximum recommended filling capacity
 - Amount of water at the bottom of the tank (if any)

13. Ensure that the driver has absorbent pads and/or buckets available at the site to place around the fill port, under the connection, around storm drains or drainage systems near the tank in case of a leak.
14. Ensure the driver secures the hose properly onto the correct fill port.
15. Ensure the driver has bonded and grounded via cables securely to the vehicle before fueling begins.
16. Remain at the fueling station with the driver, and ensure the driver can reach the fuel shutoff valve immediately during the fuel transfer.
17. Monitor the fuel gauges on the truck and tank to prevent over-filling the tank.
18. Ensure that the driver removes the hose from the fill port carefully to ensure no product is spilled onto the ground.
19. Ensure that the driver tests the fuel level inside the tank with a stick or by reading the fuel gauge after the fueling has been completed.
20. Ensure the driver calculates the final volume inside the tank and records the total quantity of fuel placed into the tank onto the fuel level measurement checklist with the fuel delivery slip.
21. Before leaving the scene, ensure that the caps and covers are placed back onto the tank and fill ports, and the area has been cleaned up.
22. Ensure that the driver drains the fueling hose properly and secures the hose to the vehicle before leaving. Inspect the lowermost drain and all outlets of the vehicle for discharges, and, if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.
23. Place the Tank-filling Monitoring Checklist into the Maintenance/Inspection Logbook for the associated tank or record this information in a field logbook.
24. Report any spills by calling 911 from a GSFC phone or (301) 286-9111 from a cell phone or by contacting the Security Operations Center (SOC) from a Goddard-issued radio.

If any of the results listed on the Tank-filling Monitoring Checklist are deficient and cannot be corrected, refuse the delivery and contact MEMD.

E6.0 ALTERNATIVE PROCEDURES FOR AST27-3 (USED OIL)

The tank AST27-3, Used Oil Storage, is filled from the used oil sump automatically; therefore, it is not reasonable to check the tank level before and after filling. The tank is equipped with a high-level warning, which goes off at the 75 percent full point. The high-level warning triggers a warning light that is visible to personnel working in the garage. The tank is also equipped with a high-level shut off that disables the automatic sump pump and engages a second warning light visible to garage workers.

Motor Pool personnel shall check the level of oil in the tank each workday and record the level in a log containing date checked, liquid level to nearest eighth of a tank, and the name of the person

checking the level. Motor Pool personnel will contact MEMD to have the tank emptied when the tank reaches 75 percent full. The high-level warning and high-level shut off will be tested whenever third party tank testing is being performed.

E7.0 RECORD KEEPING

Bulk oil transfer records shall be maintained by the tank owning organization for at least three years as required by 40 CFR 112.7(e). Record maintenance is the responsibility of the designated individual. The Logbook with the completed inspection checklists must be kept at or near the tank location, and be available for random inspections.

E8.0 BULK STORAGE UNITS AT GSFC

An inventory of the bulk storage units at GSFC is found in Appendix I of the ICP.

E9.0 CHECKLISTS

The following checklists are the Tank-filling Monitoring Checklist and the Fuel Level Monitoring Checklist. If these checklists are not used, the same information that is present on must be present in the Logbook for the respective tank.

Tank-Filling Monitoring Checklist

Tank ID: _____ Tank Location _____

<u>Inspection Items</u>	<u>Date of delivery:</u>												
1. The tank has no obvious damage/abnormal conditions.													
2. Extinguish all sources of ignition, including cigarettes and cigars.													
3. The driver chocked the wheels and grounded the vehicle before beginning to fill the tank.													
4. Install magnetic cover over the storm drain.													
5. Take and record fuel level measurements of tank prior to filling the tank.													
6. Drain-blocking devices are available to place around nearby storm drains.													
7. The manual storm drain has been closed before the start of transfer activities. (Bldgs. 24/31 only)													
8. The driver checked the hose connections to the tank and truck before beginning to fill the tank.													
9. The driver remained near the shut-off valve while the transfer of fuel takes place.													
10. Monitor the tank fuel gauge while the fuel transfer occurs to prevent overfilling the tank.													
11. Absorbent pads or buckets are available to be placed under the hose connections in case of a spill.													
12. Driver drained the hoses before securing them to the vehicle.													
13. Driver secured the tank fill covers and caps after fueling the tank was completed.													
14. Driver did not spill fuel onto the ground while disconnecting the hoses after fueling the tank was completed.													
15. If material was spilled, proper spill notification procedures enacted.													
• Witnessed By:													
• Delivered By:													

Emergency Information: If leaks are observed, stop fuel transfer immediately and shut off all valves. Absorbent material should be placed around the spill and storm drains to prevent spread, if possible. Immediately notify the SOC at 911 (internal) or (301) 286-9111 (cell phone) or on a Goddard issued radio. Inform your Supervisor or MEMD of any required maintenance to the tank, piping, or fittings to prevent a future leak or spill. **Please note:** If any of the results listed on the Tank-filling Monitoring Checklist are deficient and cannot be corrected, refuse the delivery and contact MEMD. Visit <https://itcdsp13.gsfc.nasa.gov/sites/EMS/ICP/SitePages/Home.aspx> to verify that this is the correct version.

Appendix F - Spill Cleanup Procedures and Contractors

F1.0 PURPOSE

This appendix describes GSFC’s spill cleanup procedures to ensure that they are executed properly and safely.

F2.0 SCOPE

This procedure is applicable to the Medical and Environmental Management Division (MEMD) personnel ONLY at the Greenbelt location for use in spill cleanup **after** the emergency conditions have been controlled and the hazards have been identified.

COMPLIANCE REQUIREMENTS

- 40 CFR 112.7 (a)(3)(iv) and 40 CFR 112.7 (a)(3)(v), General Requirements for Spill Prevention, Control, and Countermeasure Plans.
- 40 CFR 262 Subpart M, Preparedness, Prevention, and Emergency Procedures for Large Quantity Generators.

F3.0 INTRODUCTION

MEMD retains a spill contractor that is available for spill cleanup if the spill cannot be cleaned up with on-site resources. GSFC personnel will follow the procedures in Section 6 below for “in house” spill cleanup. Outside spill contractors will follow their own procedures, which are consistent with local, State and Federal regulations. If additional precautions are required, the outside contractor will be advised prior to initiating cleanup.

If a spill requires intervention beyond MEMD capabilities, the environmental support contractor may call upon the spill contractor to provide emergency cleanup services, remediation services, disposal and transportation of waste, and cleanup of materials or debris.

F4.0 CONTACT INFORMATION

Name	Phone Number
MEMD On Call #1	(301) 741-3159
MEMD On Call # 2	(301) 741-3053
Environmental Contractor On Call (#1 & #2)	(301) 769-6911
Miller Environmental Group (MEG) Emergency Support Contractor	(800) 394-8606 (24 hr. Emergency Response)
MEG Operations Manager	(410) 365-8364 (MD office) (703) 372-1583 (VA office)

F5.0 PROCEDURES

- Report to the Incident Commander (IC) upon arrival to the scene. Obtain all available information.

- Document a site-specific action-safety plan. Identify decontamination requirements. Establish the appropriate cleanup actions. Ensure that required equipment, materials, personnel and PPE are available. If necessary, activate the spill contractor.
- Determine if material has entered or is entering the soil, stormwater system, or sanitary sewer system. Employ defensive actions to minimize further contamination, i.e., use appropriate spill control material to contain release and prevent it from spreading further or entering any drains.
- Once imminent hazards are controlled the scene will be released by the IC to MEMD for final cleanup and appropriate decontamination.
- Properly dispose of recovered materials.
- Document all persons involved in the incident including protective services, safety, industrial hygiene (IH) and IH support, facilities maintenance personnel helping to support Code 250's efforts, and other Code 250 personnel assisting in the effort.
- Document any equipment that was involved in the investigation or incident. This may include vehicles or equipment that created a leak, equipment used to clean up a spill, and property that created an environmental issue, etc. Take pictures to document scene.
- Keep accounting of the materials that are being used to clean up the spill or release (e.g., drums, wipes, sta-dri, etc.).
- Create a map of the incident if needed to clearly identify locations including drains (storm and sanitary), spill areas, buildings, parking lots, vehicles, bodies of water (ponds, streams, etc.) vehicles, surface flow, etc. Maps are not required for indoor spills or spills that are easily described without a visual aid.
- The following format can be used in the field as a tool to document the activities associated with the environmental spill investigation process. The Release Tracking System database is used to document the details of the response and investigation.

Medical & Environmental Management Division Spill Investigation

Code 250 person investigating release:

Date of Release:

Time of Release:

Building closest to release:

Type of Material:

Release Phase:

(i.e. oil, sewage, gasoline, chemical, etc.)

(solid/ liquid/ gas)

Material Description:

Quantity of Release:

(i.e. Acetone, E85, ChemEx324, etc.)

amount

units

Check here if release occurred in an area likely to affect waters of the state:

Check here if additional assistance was required to handle this event:

Check here if this release requires a written report:

Agency to receive written report:

Media Program Affected:

Notification to Regulatory Agency (Name):	
Phone Number contacted:	

- Not Reportable
- MDE
- WSSC
- NPDES
- NRC
- SERC

- Waste
- Oil
- Air
- Storm Water
- Sanitary Water
- Other*

*Other?:

Detailed Location:

Cause of Release

- Equipment Failure
- Human Error

NO MEDICAL & ENVIRONMENTAL MANAGEMENT PERSONNEL SHALL ENTER AN AREA WERE THERE HAS BEEN A RELEASE OR SUSPECTED RELEASE OF AN UNKNOWN HAZARDOUS MATERIAL. Medical & Environmental personnel are not authorized to operate within the "Hot Zone" of a hazardous materials incident until the emergency conditions have been declared controlled by the Goddard Incident Commander (GIC).

Medical & Environmental personnel shall use their professional judgment, based on knowledge, training and experience, to assess hazards and ensure that the professional exercises appropriate protective actions to prevent undue exposure to themselves.

Medical & Environmental Management Division Spill Investigation

- Weather Related
- Natural Causes
- Unknown

Investigator's Observations:

Equipment Involved	Equipment Operator	Equipment Owner	Equipment Notes

Actions taken to clean up release

Where was recovered material and clean-up material taken?

To 27A for Management and disposal?

Other (Describe):

Date material was removed from scene of release:

Party Responsible for clean-up:

NO MEDICAL & ENVIRONMENTAL MANAGEMENT PERSONNEL SHALL ENTER AN AREA WERE THERE HAS BEEN A RELEASE OR SUSPECTED RELEASE OF AN UNKNOWN HAZARDOUS MATERIAL. Medical & Environmental personnel are not authorized to operate within the "Hot Zone" of a hazardous materials incident until the emergency conditions have been declared controlled by the Goddard Incident Commander (GIC).

Medical & Environmental personnel shall use their professional judgment, based on knowledge, training and experience, to assess hazards and ensure that the professional exercises appropriate protective actions to prevent undue exposure to themselves.

Medical & Environmental Management Division Spill Investigation

<u>Clean-up Material</u>	<u>Quantity</u>	<u>Description</u>
[Drums: 55 30 20 5 poly fiber metal]	[Sta-dri]	[Spill pads] [berms]

Person Interviewed:	<input style="width: 95%;" type="text"/>	Date of Interview:	<input style="width: 95%;" type="text"/>
Position/ Role in Incident:	<input style="width: 95%;" type="text"/>		
Notes	<input style="width: 95%; height: 100%;" type="text"/>		

Interviewer:	<input style="width: 95%;" type="text"/>	Interviewer Position:	<input style="width: 95%;" type="text"/>
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Person Interviewed:	<input style="width: 95%;" type="text"/>	Date of Interview:	<input style="width: 95%;" type="text"/>
Position/ Role in Incident:	<input style="width: 95%;" type="text"/>		
Notes	<input style="width: 95%; height: 100%;" type="text"/>		

Interviewer:	<input style="width: 95%;" type="text"/>	Interviewer Position:	<input style="width: 95%;" type="text"/>
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NO MEDICAL & ENVIRONMENTAL MANAGEMENT PERSONNEL SHALL ENTER AN AREA WERE THERE HAS BEEN A RELEASE OR SUSPECTED RELEASE OF AN UNKNOWN HAZARDOUS MATERIAL. Medical & Environmental personnel are not authorized to operate within the "Hot Zone" of a hazardous materials incident until the emergency conditions have been declared controlled by the Goddard Incident Commander (GIC).

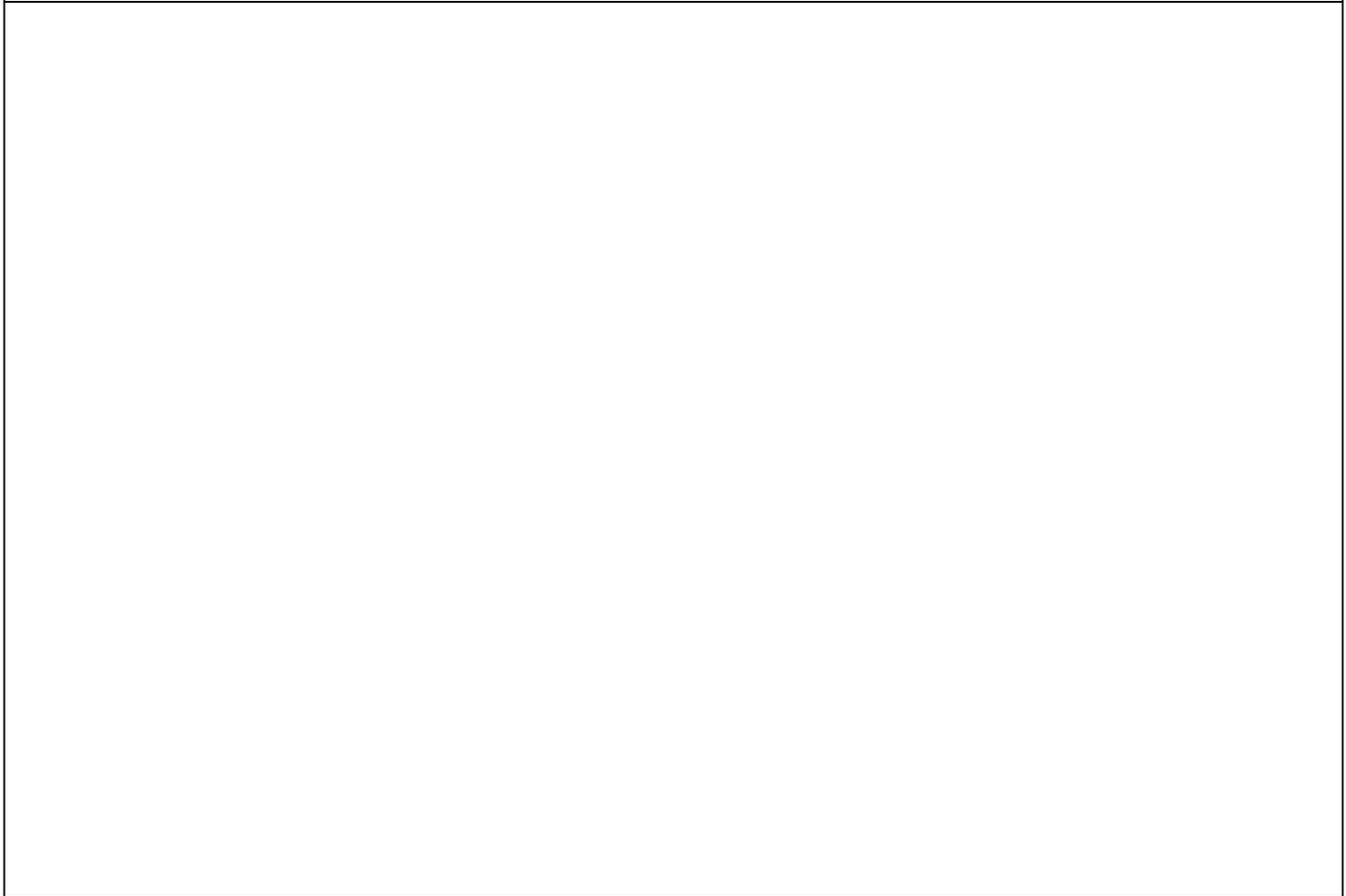
Medical & Environmental personnel shall use their professional judgment, based on knowledge, training and experience, to assess hazards and ensure that the professional exercises appropriate protective actions to prevent undue exposure to themselves.

Medical & Environmental Management Division Spill Investigation

Time Accounting:

Name	Organizational Code	Time (nearest ½ hour)

Sketch of area:



NO MEDICAL & ENVIRONMENTAL MANAGEMENT PERSONNEL SHALL ENTER AN AREA WERE THERE HAS BEEN A RELEASE OR SUSPECTED RELEASE OF AN UNKNOWN HAZARDOUS MATERIAL. Medical & Environmental personnel are not authorized to operate within the “Hot Zone” of a hazardous materials incident until the emergency conditions have been declared controlled by the Goddard Incident Commander (GIC).

Medical & Environmental personnel shall use their professional judgment, based on knowledge, training and experience, to assess hazards and ensure that the professional exercises appropriate protective actions to prevent undue exposure to themselves.

Medical & Environmental Management Division Spill Investigation

Caption	Picture

NO MEDICAL & ENVIRONMENTAL MANAGEMENT PERSONNEL SHALL ENTER AN AREA WERE THERE HAS BEEN A RELEASE OR SUSPECTED RELEASE OF AN UNKNOWN HAZARDOUS MATERIAL. Medical & Environmental personnel are not authorized to operate within the "Hot Zone" of a hazardous materials incident until the emergency conditions have been declared controlled by the Goddard Incident Commander (GIC).

Medical & Environmental personnel shall use their professional judgment, based on knowledge, training and experience, to assess hazards and ensure that the professional exercises appropriate protective actions to prevent undue exposure to themselves.

Appendix G - Spill Response Equipment

G1.0 Spill Response Equipment

Appendix G provides a listing of the minimum spill response equipment maintained for spill and release contingencies described in this Plan. This equipment is available to assist in the containment and cleanup of spills that occur at GSFC.

Material Type	Amount Available	Capabilities & Limitations	Location
Disposable Purple Nitrile Gloves	250 pairs	Protects hands from inorganic materials only.	27A and Spill Trailer
Disposable Green Solvex Nitrile Gloves	6 pairs	Protects hands from all materials found on center.	27A and Spill Trailer
Leather Gloves	6 pairs	Protects hands from possibility of being cut.	27A and Spill Trailer
Yellow Tyvek QC	20	Clothes and full body (except face) protection from acids and bases only. Cannot be used for protection against organics.	27A and Spill Trailer
White Tyvek SL	6	Clothes and full body (except face) protection from all organics except chlorinated materials found on center.	27A and Spill Trailer
White Tyvek Coveralls	25	Clothes and full body (except face) protection from dirt and oil only.	27A and Spill Trailer
Disposable Tyvek QC Aprons w/sleeve	25	Frontal splash protection from acids and bases only. Cannot be used for protection against organics.	27A and Spill Trailer
Universal Pads	50 (12"x12")	One pad is capable of absorbing 250 – 500 mL of any liquid found on center.	Spill Shed and Spill Trailer
North Full-face Respirator	4	Respiratory protection. Materials protected against are dependent on cartridge used. Offer up to 50x PEL respiratory protection	27A
North Respirator Cartridge – organic vapors, acid gases, ammonia	3 pairs	Inhalation protection from organic vapors, acid gases (not oxidizing acids) ammonia and various amines	27A and Spill Trailer
North Respirator Cartridge – organic acid, organic vapors ammonia, amines, particulates	3 pairs	Inhalation protection from organic vapors, acid gases (non-oxidizing acids), ammonia, amines and particulates	27A and Spill Trailer
North Respirator Cartridge – mercury, chlorine, with End of Service Life	2 pairs	Inhalation protection from mercury and various chlorine derivatives	27A and Spill Trailer

Material Type	Amount Available	Capabilities & Limitations	Location
Indicator (ESLI), particulates			
Plastic Shovels	2	Capable of cleaning up materials used for spill response on center.	Spill Trailer
Brooms	2	Capable of cleaning up materials used for spill response on center.	Spill Trailer
Universal Pads	150 (12"x12")	One pad is capable of absorbing 250 – 500mL.	Spill Shed and Spill Trailer
Oil Absorbent Rolls	1 (3' x100')	Capable of absorbing oil, cannot be used on hydrofluoric acid and oxidized materials.	Spill Shed and Spill Trailer
Large Spill Booms	3 (8" diameter, 5' length)	Oil absorption only.	Spill Shed and Spill Trailer
Small Spill Booms	3 (4" diameter, 10' length)	Oil absorption only.	Spill Shed and Spill Trailer
Mini Spill Booms	20 (2" diameter, 12" length)	Oil absorption only.	Spill Shed and Spill Trailer
Polysorb	1, 4 lb. bag	Capable of absorbing hydrofluoric acid and oxidized materials found on center. Mainly used for packing protection, but can be used to clean up a spill.	Spill Shed and Spill Trailer
All Purpose Absorbent	15, 50 lb. bags	Capable of absorbing all materials found on center except hydrofluoric acid and unsaturated organic compounds.	Spill Shed and Spill Trailer
Trash Bags	1 case	Disposal of spill response materials.	27A and Spill Trailer
Poly Salvage Drum	85 gallon	Capable of storing or transporting compatible materials.	27A
Box with Pallet and Liner	1 cubic yard	Secondary containment for solids and paint cans found on center.	27A
Magnetic storm drain cover	1	Protects storm drains from spilled materials. Prevents water contamination.	Spill Shed and Spill Trailer

Appendix H - Regulatory Matrices

H1.0 Regulatory Matrices

The Regulatory Compliance and Cross Reference Matrices in this appendix address the regulations that apply to GSFC as they relate to the Plan and its contents. This appendix also provides a description of the design and features of the containment building in relation to these requirements.

Section 1. Regulatory Compliance and Cross Reference Matrices

40 CFR 262 Subpart M, RCRA Contingency Plan for Less-than-90-day Waste Facility – Large Quantity Hazardous Waste Generators (as referred by 40 CFR 262.17 (a)(4))		
CFR Citation	COMAR Citation	ICP Citation
262.261 Content of contingency plan:		
(a) Emergency response actions	26.13.05.04.C(1)	Section 6
(b) Amendments to SPCC Plan	26.13.05.04.C(2)	Section 1
(c) Coordination with State and local response parties	26.13.05.04.C(3)	Section 6
(d) Emergency Coordinator(s)	26.13.05.04.C(4)	Section 6
(e) Detailed description of emergency equipment on-site	26.13.05.04.C(5)	APPENDIX G
(f) Evacuation Plan, if applicable	26.13.05.04.C(6)	Figure 13
262.262 Copies of the contingency plan	26.13.05.04.D	Section 1
262.263 Amendment of the contingency plan	26.13.05.04.E	Section 1
262.264 Emergency Coordinator	26.13.05.04.F	Section 6
262.265 Emergency Procedures		
(a) Notification	26.13.05.04.G(1)	Section 6
(b) Emergency identification/characterization	26.13.05.04.G(2)	Section 6
(c) Health/environmental assessment	26.13.05.04.G(3)	Section 6
(d) Reporting	26.13.05.04.G(4)	Section 6
(e) Containment	26.13.05.04.G(5)	Section 6
(f) Monitoring	26.13.05.04.G(6)	Section 6
(g) Treatment/Storage and disposal of wastes	26.13.05.04.G(7)	APPENDIX F
• Cleanup Procedures		
1. Disposal	26.13.05.04.G(8)(a)	APPENDIX F
2. Decontamination	26.13.05.04.G(8)(b)	APPENDIX F
(h) Follow-up procedures	26.13.05.04.G(9)	Section 6, APPENDIX F
(i) Follow up report	26.13.05.04.G(10)	APPENDIX C

Regulatory Compliance and Cross Reference Matrices, continued

40 CFR 112.7 Oil Pollution Prevention		
CFR Citation	COMAR Citation	ICP Citation
112.7 General requirements for SPCC Plans		
(a) Management approval and general requirements		Section 1
(1) Discussion of facility's conformance to this part		Section 1
(2) Reason for nonconformance.		Section 2.3
(3) Facility Description and diagrams		Section 3, Appendix M
(i) Type of oil in each container and storage capacity		Appendix I
(ii) Discharge prevention measures		Section 4, APPENDIX E
(iii) Discharge or drainage controls....		Section 4,
(iv) Countermeasures for discharge discovery, response and cleanup		Section 6, APPENDIX F
(v) Methods of disposal of recovered materials		APPENDIX F
(vi) Contact list and phone numbers		Appendix L
(4) Plan to enable a person reporting the discharge to relay information		Section 6
(5) Organize procedures to use when a discharge occurs in way that will make them readily useable in an emergency		Section 6
(b) Prediction of the direction, flow rate and total quantity of oil		Section 4 Appendix K
(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge		Appendix B
(d) Rationale for non-practicable containment or diversionary structures		Section 7
(e) Inspections, tests and records		Appendix D
(f) Employee training and discharge prevention procedures		Section 5
(g) Security		Section 6
(h) Loading/unloading areas		Section 4
(i) Brittle fracture analysis		Section 4
(j) Conformance with state requirements		Section 2, APPENDIX B

40 CFR 109, Criteria for State, Local and Regional Oil Removal Contingency Plans		
CFR Citation	COMAR Citation	ICP Citation
109.5 – Development and implementation criteria for State, local and regional contingency plans.	26.10.12.B(2) 26.27.01.07 26.13.05.04B 26.13.05.04C	Not applicable
(a) Definition of authorities, responsibilities and duties of all persons, organizations, or agencies which are to be involved or could be involved in planning or direction oil removal operations, with particular care to clearly define the authorities, responsibilities and duties of State and local government agencies to avoid unnecessary duplication of contingency planning activities and to minimize the potential for conflict and confusion that could be generated in an emergency situation as a result of such duplications. (b) Establishment of notification procedures for the purpose of early detection and timely notification of an oil discharge.	26.13.05.G(4)a 26.13.05.04.C(1)	Section 6
(1) Specification of an oil discharge response operating team consisting of trained, prepared and available operating personnel. (2) Pre-designation of a properly qualified oil discharge coordinator who is charged with the responsibility and delegated commensurate authority for directing and coordinating response operations and knows how to request assistance from Federal authorities operating under existing and regional contingency plans.	26.13.05.02.G(1)	Section 6
(3) A preplanned location for an oil discharge response operations center and a reliable communications system for directing the coordinated overall response operations.		Section 6

(4) Provisions for varying degrees of response effort depending on the severity of the oil discharge.		APPENDIX F
(c) Provisions to assure that full resource capability is known and can be committed during an oil discharge situation including:		Section 6
(1) Identification and inventory of applicable equipment, materials and supplies which are available locally and regionally.		APPENDIX G
(2) An estimate of the equipment, materials, and supplies which would be required to remove the maximum oil discharge to be anticipated.	26.13.05.04.C(5)	Section 6 APPENDIX F
(3) Development of agreements and arrangements in advance of an oil discharge for the acquisition of equipment, materials and supplies to be used in responding to such a discharge.	26.13.05.04.C(3)	Section 6, APPENDIX F

40 CFR 109, Criteria for State, Local and Regional Oil Removal Contingency Plans		
CFR Citation	COMAR Citation	ICP Citation
(d) Provisions for well-defined and specific actions to be taken after discovery and notification of discharge including:	26.13.05.04.C(1)	Section 6
(1) Specification of an oil discharge response operating team consisting of trained, prepared and available operating personnel.	26.13.05.04.C(4)	Section 6
(2) Pre-designation of a properly qualified oil discharge response coordinator who is charged with the responsibility and delegated commensurate authority for directing and coordinating response operations and who knows how to request assistance from Federal authorities operating under existing national and regional contingency plans.	26.13..05.04 F 26.13.05.04.C(4)	Section 6
(3) A pre-planned location for an oil discharge response operations center		Section 6

40 CFR 109, Criteria for State, Local and Regional Oil Removal Contingency Plans		
CFR Citation	COMAR Citation	ICP Citation
and a reliable communications system for directing the coordinated overall response operations.		
(4) Provisions for varying degrees of response effort depending on the severity of the oil discharge.		APPENDIX F
(5) Specification of the order of priority in which the various water uses are to be protected where more than one water use may be adversely affected as a result of an oil discharge and where response operations may not be adequate to protect all uses.		APPENDIX F
(e) Specific and well defined procedures to facilitate recovery of damages and enforcement measures as provided for by State and local ordinances and statutes.		Section 6
109.6 Coordination For the purposes of coordination, the contingency plans of state and local governments should be developed and implemented in consultation with private interests. A copy of any oil removal contingency plan should be forwarded to the Council on Environmental Quality upon request to facilitate the coordination of these plans with the National Oil and Hazardous Materials Pollution Contingency Plan.	26.13.05.04.D(2)	Appendix C

40 CFR 112.8 – Requirements for On-shore Facilities		
CFR Citation	COMAR Citation	ICP Citation
(a) Meet general and specific requirements listed in 122.7		See previous tables
(b) Facility drainage		Section 3
(c) Bulk storage containers		Section 4
(d) Facility transfer operations, pumping and facility process		APPENDIX E

40 CFR 112.12– Requirements for On-shore Facilities		
CFR Citation	COMAR Citation	ICP Citation
(a) Meet general and specific requirements listed in 122.7		See previous tables
(b) Facility Drainage		Section 3
(c) bulk storage containers		Section 4

29 CFR1910.120 HAZWOPER Standard		
CFR Citation	COMAR Citation	ICP Citation
	N/A	
(q) Emergency response to hazardous substance releases		APPENDIX F
(1) Emergency response plan (2) Elements of an emergency response plan (i) Pre-emergency planning and coordination with outside parties (ii) Personnel roles, lines of authority, training and communications (iii) Emergency recognition and prevention (iv) Safe distances and places of refuge (v) Site security and control (vi) Evacuation routes and procedures (vii) Decontamination procedures (viii) Emergency medical treatment and response (ix) Emergency alerting and response procedures (x) Critique of response and follow-up (xi) PPE and emergency equipment (xii) Emergency response plan coordination/integration		Section 6 APPENDIX A APPENDIX F APPENDIX F APPENDIX G
(3) Procedures for handling emergency response: (i) The senior response official responding to an emergency shall become the individual in charge of a site-specific ICS (ii) The individual in charge of the ICS shall identify to the extent possible, all		Section 6

29 CFR1910.120 HAZWOPER Standard		
CFR Citation	COMAR Citation	ICP Citation
<p>hazardous substances or conditions present and shall address, as appropriate, site analysis, use of engineering controls, maximum exposure limits, hazardous substance handling procedures and use of any new technology(ies)</p> <p>(iii) Implementation of appropriate emergency operations and use of PPE</p> <p>(iv) Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard shall wear a self-contained breathing apparatus while engaged in emergency response until such time that the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.</p> <p>(v) The individual in charge of the ICS shall limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who are actively performing emergency operations.</p> <p>(vi) Backup personnel shall standby with equipment necessary to provide assistance or rescue</p>		<p>Section 6</p> <p>Section 6</p> <p>Section 6</p> <p>Section 6</p> <p>Section 6</p>

29 CFR1910.120 HAZWOPER Standard		
CFR Citation	COMAR Citation	ICP Citation
(vii) The individual in charge of the ICS shall designate a safety official who is knowledgeable in the operations being implemented	N/a	Section 6
(viii) When activities are judged by the safety official to be an Immediately Danger to Life and Health (IDLH) condition, the safety official has the authority to suspend, alter or terminate activities	N/a	Section 6
(ix) After emergency operations have terminated, the individual in charge of the ICS shall implement appropriate decontamination procedures (x) When deemed necessary for meeting the tasks at hand, approved SCBA may be used with approved cylinders from other approved SCBAs	N/a	APPENDIX F
(4) Skilled support personnel		Section 6
(5) Specialist employees (6) training (i) first responder level (ii) first responder operations level (iii) Hazardous waste site worker (iv) On-scene Incident Commander (7) Trainers (8) Refresher training (9) medical surveillance and consultation (10) Chemical protective clothing (11) Post-emergency response operations		Section 6 Section 5 Section 5 Section 5 Section 5 Section 5 Section 5 Section 5 (not addressed in this plan) APPENDIX F Section 3, APPENDIX F

Subpart DD – Containment Buildings §267.1101, § 267.1102 Requirements	How requirements are met	PE signature verifying each requirement has been met	
267.1101	a) The containment building must be completely enclosed with a floor, walls and a roof to prevent exposure to the elements, and to assure containment of managed wastes	Bldg. 27A is a completely enclosed structure meeting the requirements of the subsection.	Section 1
267.1101	b) the floor and containment walls of the unit, including the secondary containment system, if required under §267.1103 must be designed and constructed of manmade materials of sufficient strength and thickness to: (1) Support themselves, the waste contents and any personnel and heavy equipment that operates within the unit. (2) Prevent failure due to: (i) pressure gradients, settlement, compression, or uplift. (ii) Physical contact with the hazardous wastes to which they are exposed (iii) Climatic conditions (iv) Stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. (v) Collapse or other failure	Bldg. 27A is elevated such to prevent the entrance of floodwaters and to provide the foundation with a solid base. The floor of the building is constructed of high strength concrete, the exterior walls are made of strengthened concrete masonry unit (CMU) with a red brick veneer. Interior walls are separated by the same CMU used in external construction. Each room is designated to store a particular hazard class. The building is temperature controlled to prevent the freezing of wastes. Each room is individually ventilated to the outside	Section 1
267.1101	c) All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes	The floor of each room contains a blind sump and is coated with an epoxy finish. Each room also has	Section 1

Subpart DD – Containment Buildings §267.1101, § 267.1102 Requirements		How requirements are met	PE signature verifying each requirement has been met
		shelving and a resistant liner to minimize the potential for spills	
267.1101	d) You must not place incompatible hazardous wastes or treatment reagents in the unit or its secondary containment system if they could cause the unit or secondary containment system to lead, corrode or otherwise fail.	See above	Section 1
267.1101	e) A containment building must have a primary barrier to withstand the movement of personnel , waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed	See discussion on construction	Section 1

Subpart DD – Containment Buildings §267.1101, § 267.1102 Requirements		How requirements are met	PE signature verifying each requirement has been met
267.1101	f) If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight door and windows that meet these criteria: (1) Provide an effective barrier against fugitive dust emissions under §267.1102(d) (2) The unit is designed and operated in a fashion that assures that wastes will not come in contact with these openings	The ventilation system is constructed of metal ductwork, the air return is located 1 foot from the floor in each room; the vent is located at the ceiling.	Section 1
267.1101	g) You must inspect and record in the facility’s operating record, at least once every seven day data	The building is inspected weekly and records are	Section 1

Subpart DD – Containment Buildings §267.1101, § 267.1102 Requirements		How requirements are met	PE signature verifying each requirement has been met
	gathered from monitoring equipment and leak detection equipment, as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.	maintained for 3 years	
267.1101	h) You must obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of §§267.1102, 267.1103 and paragraphs (a) through (f) of this section		Section 1
267.1102	(a) Maintain the primary barrier to be free of significant cracks, gaps, corrosion or other deterioration that could cause hazardous waste to be released from the primary barrier	The building is inspected weekly and the records are retained for 3 years	Section 1
267.1102	(b) Maintain the level of stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded	Containers are only stored in single layers. This applies to containers on shelves and floors	Section 1
267.1102	(c) Take measures to prevent personnel or equipment used in handling hazardous waste from tracking it out of the unit. Designate an area for decontamination, with collection and management of any rinsate	If any equipment becomes contaminated, it would be wiped down using the appropriate cleaning solvent. The decontamination residue would be handled according to hazard class.	Section 1
267.1102	(d) Take measures to control fugitive dust emissions such that any openings exhibit no visible emissions. All air pollution control devices must be fully	No treatment occurs in this building requiring to have air pollution control equipment.	Section 1

Subpart DD – Containment Buildings §267.1101, § 267.1102 Requirements	How requirements are met	PE signature verifying each requirement has been met
operational during waste handling and treatment operations		

Subpart DD – Containment Buildings §267.1103 Requirements	How requirements are met	PE signature verifying each requirement has been met
<p>267.1103 a) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier</p> <p>b) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building</p> <p>1) The primary barrier must be sloped to drain liquid to the associated collection system; and</p> <p>2) must collect and remove liquids and waste to minimize hydraulic head on the containment system at the earliest practicable time</p>	Each containment room or area has a sunken floor that is sloped to a blind sump. If any liquid is noticed in the sump(s) it is immediately investigated and removed. Corrective actions are initiated to find and correct the source of the liquid	Section 1
<p>267.1103 c) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier and a leak detection system capable of detecting failure of the primary barrier and collection accumulated hazardous wastes and liquids at the earliest practical time.</p> <p>1)The requirements may be met by doing the following:</p> <p>(i) constructed with a bottom slope of 1% or more,</p> <p>2) Prevent the release of aerosols to other portions of the building when performing treatment</p>	Aerosol depleting operations are performed in a device used to capture emissions and liquids and direct them into a container with an activated carbon filter to capture the emissions emitted from the emptying the aerosol can.	Section 1

Subpart DD – Containment Buildings §267.1103 Requirements	How requirements are met	PE signature verifying each requirement has been met
3) Construct the secondary containment system using materials that are chemically resistant to the waste and liquids managed in the containment building, and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials by any equipment used in the containment building.		

Appendix I - SPCC Oil Storage Inventory

11.0 SPCC Oil Storage Inventory

Tank Type	Tank Identification	Tank Capacity	Tank Contents	Secondary Containment	Piping
Drum(s)					
	001-DSP001	55	Fats/Grease/Cooking Oil	Containment Pallet	N/a
	007-DSP001	55	Used Oil	Containment Pallet	N/a
	010-DSP001	220	Various Oils	Containment Pallet	N/a
	010-DSP002	220	Used Oil	Containment Pallet	N/a
	021-DSP001	110	Fats/Grease/Cooking Oil	Containment Pallet	N/a
	024-DSP001	110	Various Oils	Indoor/ Building	N/a
	027A-DSP-001	500	Used Oil	Indoor/ Building	N/a
	031-DSP001	550	Various Oils	Containment Area	N/a
	031-DSP002	110	Used Oil	Containment Area	N/a
	085-DSP-001	660	Various Oils	Indoor/ Building	N/a
	093-DSP001	440	Various Oils	Indoor/ Building	N/a
	<u>11</u>	<u>3,030</u>			
Mobile					
	000-FST001	300	No. 2 Fuel Oil	Double-Walled	N/a
	000-GEN001	310	No. 2 Fuel Oil	Double-Walled	N/a
	000-GEN002	310	No. 2 Fuel Oil	Double-Walled	N/a
	000-GEN007	190	No. 2 Fuel Oil	Double-Walled	N/a
	000-GEN009	190	No. 2 Fuel Oil	Double-Walled	N/a
	000-GEN021	1,000	No. 2 Fuel Oil	Double-Walled	N/a
	<u>6</u>	<u>2,300</u>			
Stationary					
	001A-GEN001	385	No. 2 Fuel Oil	Double-Walled	N/a
	007-GEN001	1,000	No. 2 Fuel Oil	Double-Walled	N/a

*F/DW – Fiberglass/Double-Walled Underground Piping

	009A-GEN001	175	No. 2 Fuel Oil	Double-Walled	N/a
Stationary	010-GEN002	500	No. 2 Fuel Oil	Double-Walled	N/a
	015-LOT001	250	Hydraulic Fluid	Indoor/ Building	N/a
	024C-FDT003	750	No. 2 Fuel Oil	Containment Area	N/a
	024C-FDT004	750	No. 2 Fuel Oil	Containment Area	N/a
	024C-LOT001	275	New Motor Oil	Indoor/ Building	N/a
	024C-LOT002	275	New Motor Oil	Indoor/ Building	N/a
	024D-FST001	50,000	No. 2 Fuel Oil	Concrete Curb	F/DW*
	024D-FST002	50,000	No. 2 Fuel Oil	Concrete Curb	F/DW
	024D-FST003	50,000	No. 2 Fuel Oil	Concrete Curb	F/DW
	024D-WST001	2,000	Used Oil	Concrete Curb	N/a
	027-FST001	5,000	Unleaded	Double-Walled	N/a
	027-FST002	5,000	Unleaded	Double-Walled	N/a
	027-FST003	5,000	E-85	Double-Walled	N/a
	027-FST004	5,000	Biodiesel	Double-Walled	N/a
	027-LOT001	330	New Motor Oil	Double-Walled	N/a
	027-WST001	300	Used Oil	Double-Walled	N/a
	028B-GEN001	70	No. 2 Fuel Oil	Double-Walled	N/a
	030A-FST001	500	No. 2 Fuel Oil	Double-Walled	N/a
	031B-FST001	20,000	No. 2 Fuel Oil	Concrete Curb	F/DW
	031B-FST002	20,000	No. 2 Fuel Oil	Concrete Curb	F/DW
	031-FDT001	750	No. 2 Fuel Oil	Containment Area	N/a
	031-FDT002	750	No. 2 Fuel Oil	Containment Area	N/a
	031-FDT003	750	No. 2 Fuel Oil	Containment Area	N/a
	031-LOT001	500	New Motor Oil	Indoor/ Building	N/a
	031-WST001	2,000	Used Oil	Indoor/ Building	N/a
	079-FST003	275	No. 2 Fuel Oil	Concrete Curb	N/a
	079-FST004	275	No. 2 Fuel Oil	Concrete Curb	N/a
	30	222,860			
Total Inventory	47	228,190			

*F/DW – Fiberglass/Double-Walled Underground Piping

I-3

Appendix J - Tier II Report



National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, MD 20771

Reply to Attn of: 250

Mr. Benjamin M. Barksdale, Fire Chief
Prince George's County
Fire and Emergency Medical Services Department
9201 Basil Court, Suite 452
Largo, MD 20774

Dear Mr. Barksdale,

As required by Section 312 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the Goddard Space Flight Center is submitting the enclosed 2018 Tier II Emergency and Hazardous Chemical Inventory. If you have any questions or comments concerning this report, please contact Ms. Lixa Rodriguez-Ramon at (301) 286-4613.

Sincerely,

A handwritten signature in black ink, appearing to read "K Finch".

Kimberly Finch, P.E.
Chief, Medical and Environmental Management Division

Enclosure

Tier II Emergency and Hazardous Chemical Inventory
Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850

Reporting Period From January 1, 2018 to December 31, 2018

Annual Update Revised Facility Information has changed from the last submission

Facility Identification				Owner/Operator Details	
Facility ID:	1850	LEPC:	Prince George's County LEPC	Name:	NASA Goddard Space Flight Center
Facility Name:	NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon)	Lat/Long:	38.9913978/-76.852567 5	Address:	8800 GREENBELT ROAD, CODE 250, Attn. Kimberly Finch - Code 250 GREENBELT, MD 20771, United States
Maximum Occupants:	8200			Phone:	301-286-7442 Email: kimberly.s.finch@nasa.gov
Physical Location:	8800 GREENBELT ROAD, GREENBELT, Nature of Business: MD 20771				
County:	Prince Georges	NAICS Code:	927110	Parent Company Details	
Fire Department:	Prince George's Fire/ EMS Department	SIC Code:	9661	Name:	
Phone:	301-286-4613	Dun and Brad No:		Dun and Brad No:	
<input checked="" type="checkbox"/> Manned <input type="checkbox"/> Unmanned					
Subject to EPCRA Section 312 (Annual Inventory)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Tier II Information Contact	
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Name: Lixa Rodriguez-Ramon	
Subject to Section 112r of Clean Air Act (CAA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Title: Environmental Engineer	
RMP Facility ID:				Phone: 301-286-4613 24 Hr.Phone: 301-286-8661	
Subject to EPCRA Section 313 (Toxic Release Inventory - TRI)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Email: lixa.e.rodriguez-ramon@nasa.gov	
TRI Facility ID:					
Facility Emergency Planning Coordinator					
Name: Brenden Kettner					
Title: Emergency Coordinator					
Phone: 757-824-1985 24 Hr.Phone: 757-894-7235					
Email: Brenden.J.Kettner@nasa.gov					
Emergency Contacts					
Name	Title	Phone	24 Hr.Phone	Email	
Security Operations Center	Uniform Services Division	301-286-8661	301-286-8661	Brenden.J.Kettner@nasa.gov	
Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 22, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.				Optional Attachments	
Kimberly Finch, P.E., Chief, Medical & Env Mngt Div		2/8/2019 10:19:48 AM	301-286-4230	<input type="checkbox"/> Site Plan	
Name and official title of owner/operator or authorized representative		Date Signed	Telephone Number	<input type="checkbox"/> Site Coordinate Abbreviations	
				<input type="checkbox"/> Other Safeguard measures	
				<input type="checkbox"/> Facility Emergency Response Plan	

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 150235 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 68476-30-2 Trade Secret: <input type="checkbox"/> Chemical Name: #2 Fuel Oil EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPO: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input checked="" type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location						
	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
Max Daily Amt (lbs): 1538280 Max Daily Amt Code: 12 Avg Daily Amt (lbs): 1538280 Avg Daily Amt Code: 12 Max Amt in Largest Container (lbs): No of days onsite: 365	[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	CODE 220/Facilities Management Division			
	[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	CODE 270/Information and Logistics Management Division			
	[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards													
Chemical ID: 150249 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 67-64-1 Trade Secret: <input type="checkbox"/> Chemical Name: Acetone EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Gem cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)													
Inventory	Storage Codes & Location														
Max Daily Amt (lbs): 11000 Max Daily Amt Code: 06 Avg Daily Amt (lbs): 11000 Avg Daily Amt Code: 06 Max Amt in Largest Container (lbs): No of days onsite: 365	<table border="1"> <thead> <tr> <th>Container Type</th> <th>Pressure</th> <th>Temperature</th> <th>Storage Location</th> <th>Description</th> <th>Is Confidential</th> <th>Max Amt At Location (lbs)</th> </tr> </thead> <tbody> <tr> <td>[M]Glass bottles or jugs</td> <td>[1]Ambient pressure</td> <td>[4]Ambient temperature</td> <td>Ubiquitous</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			
Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)									
[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous												

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150244 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7440-37-1 Trade Secret: <input type="checkbox"/> Chemical Name: Argon EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input checked="" type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input checked="" type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 24999 Max Daily Amt Code: 06 Avg Daily Amt (lbs): 24999 Avg Daily Amt Code: 06 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[L]Cylinder	[2]Greater than ambient pressure	[7]Cryogenic conditions	CODE 660/ASTROP HYSICS Science Division			
	[L]Cylinder	[2]Greater than ambient pressure	[7]Cryogenic conditions	CODE 690/Solar System Exploration Division			
	[L]Cylinder	[2]Greater than ambient pressure	[7]Cryogenic conditions	CODE 549/Environmental Test Engineering and Integration Branch			
	[L]Cylinder	[2]Greater than ambient pressure	[7]Cryogenic conditions	CODE 553/Detector System Branch			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150247 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 75-45-6 Trade Secret: <input type="checkbox"/> Chemical Name: Chlorodifluoromethane EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input checked="" type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 74999 Max Daily Amt Code: 08 Avg Daily Amt (lbs): 74999 Avg Daily Amt Code: 08 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[A]Above ground tank	[2]Greater than ambient pressure	[6]Less than ambient temperature but not cryogenic	Code 227			
	[E]Plastic or nonmetallic drum	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150250 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 67-66-3 Trade Secret: <input type="checkbox"/> Chemical Name: Chloroform EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: Methane, trichloro- <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input checked="" type="checkbox"/> Simple asphyxiant <input type="checkbox"/> Skin corrosion or irritation <input checked="" type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 999 Max Daily Amt Code: 03 Avg Daily Amt (lbs): 999 Avg Daily Amt Code: 03 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 541/Materials Eng			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 600/Sciences and Exploration Directorate			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150241 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: N/A Trade Secret: <input type="checkbox"/> Chemical Name: E-85 EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input type="checkbox"/> Pure <input checked="" type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 49999 Max Daily Amt Code: 07 Avg Daily Amt (lbs): 49999 Avg Daily Amt Code: 07 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	CODE 270/Information & Logistics Management Division			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150236 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 8006-61-9 Trade Secret: <input type="checkbox"/> Chemical Name: Gasoline, Unleaded EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 99999 Max Daily Amt Code: 09 Avg Daily Amt (lbs): 99999 Avg Daily Amt Code: 09 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	CODE 270/Information and Logistics Management Division			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150248 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7647-01-0 Trade Secret: <input type="checkbox"/> Chemical Name: <u>Hydrochloric acid</u> EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPC: <input type="checkbox"/> EHS Name: Hydrogen chloride (gas only) <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input checked="" type="checkbox"/>	<input type="checkbox"/> Combustible dust <input checked="" type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 168 Max Daily Amt Code: 02 Avg Daily Amt (lbs): 168 Avg Daily Amt Code: 02 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location(lbs)
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 600/Sciences and Exploration Directorate			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 553/Detector Development			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 547/Plating Shop			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards																	
Chemical ID: 150237 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7664-39-3 Trade Secret: <input type="checkbox"/> Chemical Name: Hydrofluoric acid EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input checked="" type="checkbox"/> EHS Name: Hydrogen fluoride (anhydrous) <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input checked="" type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input checked="" type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input checked="" type="checkbox"/> Specific target organ toxicity (single or repeated exposure)																	
Inventory	Storage Codes & Location																		
Max Daily Amt (lbs): 163 Max Daily Amt Code: 02 Avg Daily Amt (lbs): 163 Avg Daily Amt Code: 02 Max Amt in Largest Container (lbs): No of days onsite: 365	<table border="1"> <thead> <tr> <th>Container Type</th> <th>Pressure</th> <th>Temperature</th> <th>Storage Location</th> <th>Description</th> <th>Is Confidential</th> <th>Max Amt At Location(lbs)</th> </tr> </thead> <tbody> <tr> <td>[N]Plastic bottles or jugs</td> <td>[1]Ambient pressure</td> <td>[4]Ambient temperature</td> <td>CODE 553/DETECT OR System</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location(lbs)	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 553/DETECT OR System							
Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location(lbs)													
[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 553/DETECT OR System																

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150251 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7722-84-1 Trade Secret: <input type="checkbox"/> Chemical Name: Hydrogen peroxide (Conc.< 52%) EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: Hydrogen peroxide (Conc.> 52%) <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input checked="" type="checkbox"/>	<input type="checkbox"/> Combustible dust <input checked="" type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input checked="" type="checkbox"/> Organic peroxide <input checked="" type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input checked="" type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 464.73 Max Daily Amt Code: 02 Avg Daily Amt (lbs): 464.73 Avg Daily Amt Code: 02 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 547/Plating Shop			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 553/Detector Development			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150245 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 67-63-0 Trade Secret: <input type="checkbox"/> Chemical Name: Isopropanol EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPC: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 24999 Max Daily Amt Code: 06 Avg Daily Amt (lbs): 24999 Avg Daily Amt Code: 06 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 660/Astrophysics Science Division			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 553/Detector Systems Branch			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 549/Environmental Test Engineering and Integration Branch			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150239 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7439-92-1 Trade Secret: <input type="checkbox"/> Chemical Name: Lead EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input type="checkbox"/> Pure <input checked="" type="checkbox"/> Mix <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input checked="" type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 9999 Max Daily Amt Code: 05 Avg Daily Amt (lbs): 9999 Avg Daily Amt Code: 05 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[F]Can	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			
	[R]Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	UNINTERRU PTIBLE POWER SUPPLY (UPS)			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850

Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150253 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 13463-39-3 Trade Secret: <input type="checkbox"/> Chemical Name: Nickel carbonyl EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input checked="" type="checkbox"/> EHS Name: Nickel carbonyl <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input checked="" type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input type="checkbox"/> Skin corrosion or irritation <input checked="" type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 1 Max Daily Amt Code: 01 Avg Daily Amt (lbs): 1 Avg Daily Amt Code: 01 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 553/Detector Development			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150242 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7697-37-2 Trade Secret: <input type="checkbox"/> Chemical Name: Nitric acid EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: Nitric acid (conc 80% or greater) <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: <input type="checkbox"/> Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input checked="" type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input checked="" type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input checked="" type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 708 Max Daily Amt Code: 03 Avg Daily Amt (lbs): 708 Avg Daily Amt Code: 03 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[D]Steel drum	[1]Ambient pressure	[4]Ambient temperature	CODE 547/PLATIN G SHOP			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 553/DETECT OR System			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 562/Parts, Packaging, and Assembly Tech Office			
	[E]Plastic or nonmetallic drum	[1]Ambient pressure	[4]Ambient temperature	CODE 547/PLATIN G SHOP			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 660/ASTROP HYSICS Science			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 690/SOLAR System Exploration			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150238 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7727-37-9 Trade Secret: <input type="checkbox"/> Chemical Name: Nitrogen EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input checked="" type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input checked="" type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input checked="" type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 37885 Max Daily Amt Code: 07 Avg Daily Amt (lbs): 37885 Avg Daily Amt Code: 07 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[A]Above ground tank	[2]Greater than ambient pressure	[7]Cryogenic conditions	CODE 549/Environmental Test Engineering and Integration Branch			
	[A]Above ground tank	[2]Greater than ambient pressure	[7]Cryogenic conditions	CODE 541/MATERIALS Engineering			
	[L]Cylinder	[2]Greater than ambient pressure	[7]Cryogenic conditions	UBIQUITOUS, DEWARS UP TO 100 GALLON			
	[L]Cylinder	[2]Greater than ambient pressure	[6]Less than ambient temperature but not cryogenic	UBIQUITOUS, CYLINDERS VARIOUS SIZES			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150246 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 64742-65-0 Trade Secret: <input type="checkbox"/> Chemical Name: Oils EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 481360 Max Daily Amt Code: 10 Avg Daily Amt (lbs): 481360 Avg Daily Amt Code: 10 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location(lbs)
	[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Ubiquitous			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150252 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7782-44-7 Trade Secret: <input type="checkbox"/> Chemical Name: Oxygen EHS: <input type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input type="checkbox"/> EHS Name: <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input checked="" type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 11626 Max Daily Amt Code: 06 Avg Daily Amt (lbs): 11626 Avg Daily Amt Code: 06 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[L]Cylinder	[2]Greater than ambient pressure	[7]Cryogenic conditions	Ubiquitous			
	[L]Cylinder	[2]Greater than ambient pressure	[6]Less than ambient temperature but not cryogenic	Ubiquitous			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150254 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 151-50-8 Trade Secret: <input type="checkbox"/> Chemical Name: Potassium cyanide EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input checked="" type="checkbox"/> EHS Name: Potassium cyanide <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input checked="" type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input checked="" type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input checked="" type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 161 Max Daily Amt Code: 02 Avg Daily Amt (lbs): 161 Avg Daily Amt Code: 02 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 547/Plating Shop			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 553/Detector Development			
	[I]Fiber drum	[1]Ambient pressure	[4]Ambient temperature	Code 547/Plating Shop			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150243 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 143-33-9 Trade Secret: <input type="checkbox"/> Chemical Name: Sodium Cyanide EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input checked="" type="checkbox"/> EHS Name: Sodium cyanide (NaCN) <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input checked="" type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input checked="" type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input checked="" type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input checked="" type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input checked="" type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 110 Max Daily Amt Code: 02 Avg Daily Amt (lbs): 110 Avg Daily Amt Code: 02 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	is Confidential	Max Amt At Location(lbs)
	[1]Fiber drum	[1]Ambient pressure	[4]Ambient temperature	CODE 547/PLATIN G SHOP			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
 Reporting Period From January 1, 2018 to December 31, 2018

Chemical Description	Physical Hazards	Health Hazards					
Chemical ID: 150240 Check if Chemical Information is changed from the last submission: <input checked="" type="checkbox"/> CAS #: 7664-93-9 Trade Secret: <input type="checkbox"/> Chemical Name: Sulfuric acid EHS: <input checked="" type="checkbox"/> Contains EHS: <input type="checkbox"/> Exceeds TPQ: <input checked="" type="checkbox"/> EHS Name: Sulfuric acid (aerosol forms only) <input checked="" type="checkbox"/> Pure <input type="checkbox"/> Mix <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas Chemical Added On: Check if the chemical is below reporting threshold: <input type="checkbox"/>	<input type="checkbox"/> Combustible dust <input checked="" type="checkbox"/> Corrosive to metal <input type="checkbox"/> Explosive <input type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) <input type="checkbox"/> Gas under pressure <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> In contact with water emits flammable gas <input type="checkbox"/> Organic peroxide <input type="checkbox"/> Oxidizer (liquid, solid or gas) <input type="checkbox"/> Pyrophoric (liquid or solid) <input type="checkbox"/> Pyrophoric gas <input type="checkbox"/> Self-heating <input type="checkbox"/> Self-reactive	<input type="checkbox"/> Acute toxicity (any route of exposure) <input type="checkbox"/> Aspiration hazard <input checked="" type="checkbox"/> Carcinogenicity <input type="checkbox"/> Germ cell mutagenicity <input type="checkbox"/> Hazard Not Otherwise Classified (HNOC) <input type="checkbox"/> Reproductive toxicity <input checked="" type="checkbox"/> Respiratory or skin sensitization <input checked="" type="checkbox"/> Serious eye damage or eye irritation <input type="checkbox"/> Simple asphyxiant <input checked="" type="checkbox"/> Skin corrosion or irritation <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure)					
Inventory	Storage Codes & Location						
Max Daily Amt (lbs): 9999 Max Daily Amt Code: 05 Avg Daily Amt (lbs): 9999 Avg Daily Amt Code: 05 Max Amt in Largest Container (lbs): No of days onsite: 365	Container Type	Pressure	Temperature	Storage Location	Description	Is Confidential	Max Amt At Location (lbs)
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	Code 553/Detector System Branch			
	[R]Other Desc:	[1]Ambient pressure	[4]Ambient temperature	UNINTERRUPTIBLE POWER SUPPLY (UPS)			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 561/Flight Data Systems and Radiation Effects			
	[N]Plastic bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 660/ASTROPHYSICS Science			
	[M]Glass bottles or jugs	[1]Ambient pressure	[4]Ambient temperature	CODE 690/SOLAR System Exploration			
	[E]Plastic or nonmetallic drum	[1]Ambient pressure	[4]Ambient temperature	CODE 547/PLATINUM SHOP			

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: NASA - GODDARD SPACE FLIGHT CENTER (ATTN: CODE 250/Lixa Rodriguez-Ramon) Facility ID: 1850
Reporting Period From January 1, 2018 to December 31, 2018

Chemical Amount Range Code & Description		
#	Code	Amount Range
1	01	[01] 0-99
2	02	[02] 100-499
3	03	[03] 500-999
4	04	[04] 1,000-4,999
5	05	[05] 5,000-9,999
6	06	[06] 10,000-24,999
7	07	[07] 25,000-49,999
8	08	[08] 50,000-74,999
9	09	[09] 75,000-99,999
10	10	[10] 100,000-499,999
11	11	[11] 500,000-999,999
12	12	[12] 1,000,000-9,999,999
13	13	[13] 10,000,000- Greater than 10 million

Community Right To Know

[Community Right-to-Know \(CRTK\) Fund](#)
[Maryland Online Tier II Reporting System \(MOTTRS\)](#)
[CRTK Home](#)

What is the Emergency Planning and Community Right-to-Know Act?

Attention Maryland Tier II Facilities

IMPORTANT FOR 2017 TIER TWO REPORTS

EVERY CHEMICAL ENTRY MUST BE EDITED FOR THE 2017 REPORTS

The US EPA revised the Section 311 and 312 reporting requirements to reflect the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). As a result, the Physical and Health Hazards section of these reports have been expanded from 5 categories to 24. To satisfy these requirements all the owners or operators of covered facilities must submit a revised Section 311 submission and Section 312 Inventory that use the new categories. The Section 311 is a list of the hazardous substances at the facility that is arranged according to hazard categories. The Section 312 report is the Tier Two Emergency and Hazardous Chemical Inventory Report due March 1 of each year.

The Maryland Online Tier Two Reporting System (MOTTRS) has been updated to accommodate the new reporting requirements. We highly recommend that covered facilities begin their reports early. For more information about the new reporting requirements, click [here](#) (leave MDE).

All Tier Two Reports must be submitted online.

Owners and operators of Tier Two facilities in Maryland must use the Maryland Online Tier Two Reporting System (MOTTRS). Use of any other reporting format will not fulfill the reporting obligation to the State Emergency Response Commission (SERC).

Submission of a certified Tier Two Report to MDE using MOTTRS fulfills the reporting obligation to the State Emergency Response Commission (SERC). There is no need to mail a signed paper copy of the completed report to MDE. The online submission also fulfills the Local Emergency Planning Committee (LEPC) reporting obligation for all Maryland counties.

Owners or operators of covered facilities should check with their LEPC regarding submission of Tier Two Reports to the local fire departments.

Click [here](#) for a list of Maryland LEPC contacts.

For more information about MOTTRS click [here](#).

If you have any questions, contact Patricia Williams by phone at 410-537-3800 or by email at Patricia.Williams1@maryland.gov.

Quick References

- [Community Right to Know Fund](#)
- [Maryland Online Tier Two Reporting System \(MOTTRS\) Information](#)
- [Maryland Online Tier II Reporting System](#)
- [CERCLA/EPCRA Reporting of Releases from Animal Waste](#)

The Emergency Planning and Community Right-to-Know Act (EPCRA) is Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and is often referred to as SARA Title III. EPCRA was the United States congressional response to serious chemical incidents that occurred in Bhopal, India and Institute, West Virginia in the two years prior to its enactment. The incident in Bhopal resulted in 2,000 immediate fatalities. While the accident in West Virginia caused no fatalities, the circumstances were similar and aroused concern.

EPCRA was designed to provide all levels of government and the public with information required to plan for a chemical incident. The law was meant as a starting point for an on going dialogue between community representatives, emergency response personnel, and industry. EPCRA requires each state to establish a state emergency response commission (SERC), to designate local emergency planning districts, and to appoint a local emergency planning committee (LEPC) for each district. Industries are required to provide the government with information about their activities with hazardous and toxic chemicals. The SERC and the LEPCs use the information in their emergency planning activities and make it available to the public. In Maryland, MDE serves as the repository for all notifications, reports, and inventories that must be submitted to the SERC. The Maryland SERC designated the 23 counties, Baltimore City and Ocean City as planning districts. An LEPC has been established for each district. [Click here for a list of LEPC and SERC Chairpersons, their addresses and phone numbers.](#)

What are the EPCRA Reporting Requirements?

Section 302 -- Emergency Planning Notification

The owner or operator of any facility with a quantity of a listed Extremely Hazardous Substance (EHS) that meets or exceeds the threshold

Appendix K – Oil Spill Contingency Plan (OSCP) Spill Table

K1.0 Oil Spill Contingency Plan (OSCP) Spill Table

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
001-DSP-001	55g	LOW	E	55 g	0.01 GPM – instantaneous	DB8
007-DSP-001	55g	LOW	N/a*	55 g	0.01 GPM – instantaneous	-
010-DSP-001	220g	LOW	N/a*	Up to 220 g	0.01 GPM – instantaneous	-
021-DSP-001	110 g	LOW	E	Up to 110 g	0.01 GPM – instantaneous	DB 1
024-DSP-001	110 g	LOW	N/a*	Up to 110 g	0.01 GPM – instantaneous	-
027a-DSP-001	500 g	LOW	NE	Up to 550 g	0.01 GPM – instantaneous	DB4
031-DSP-001	550g	LOW	N/a*	Up to 550 g	0.01 GPM – instantaneous	-
031-DSP-002	110g	LOW	N/a*	Up to 110g	0.01 GPM – instantaneous	-
085-DSP-001	660 g	LOW	N/a*	Up to 660g	0.01 GPM – instantaneous	-
093-DSP-001	440g	LOW	N/a*	Up to 440g	0.01 GPM – instantaneous	-
001-ELV-001	396 g	Low/Medium	N/a*	369 g	0.01 GPM – instantaneous	-
003-ELV-001	590 g	Low/Medium	N/a*	590g	0.01 GPM – instantaneous	-
005-ELV-001	265g	Low/Medium	N/a*	265g	0.01 GPM – instantaneous	-
006-ELV-001	446g	Low/Medium	N/a*	446g	0.01 GPM – instantaneous	-
007-ELV-001	541g	Low/Medium	N/a*	541g	0.01 GPM – instantaneous	-
007-ELV-002	768g	Low/Medium	N/a*	768g	0.01 GPM – instantaneous	-
011-ELV-001	338g	Low/Medium	N/a*	338g	0.01 GPM – instantaneous	-
012-ELV-001	435g	Low/Medium	N/a*	435g	0.01 GPM – instantaneous	-
013-ELV-001	428g	Low/Medium	N/a*	428g	0.01 GPM – instantaneous	-
013-ELV-002	356g	Low/Medium	N/a*	356g	0.01 GPM – instantaneous	-

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
013-ELV-003	280g	Low/Medium	N/a*	280g	0.01 GPM – instantaneous	-
014-ELV-001	368g	Low/Medium	N/a*	368g	0.01 GPM – instantaneous	-
016-ELV-001	397g	Low/Medium	N/a*	397g	0.01 GPM – instantaneous	-
016-ELV-002	771g	Low/Medium	N/a*	771g	0.01 GPM – instantaneous	-
017-ELV-001	229g	Low/Medium	N/a*	229g	0.01 GPM – instantaneous	-
018-ELV-001	221g	Low/Medium	N/a*	221g	0.01 GPM – instantaneous	-
020-ELV-112	112g	Low/Medium	N/a*	112g	0.01 GPM – instantaneous	-
021-ELV-001	453g	Low/Medium	N/a*	453g	0.01 GPM – instantaneous	-
021-ELV-002	494g	Low/Medium	N/a*	494g	0.01 GPM – instantaneous	-
021-ELV-003	354g	Low/Medium	N/a*	354g	0.01 GPM – instantaneous	-
022-ELV-001	452g	Low/Medium	N/a*	452g	0.01 GPM – instantaneous	-
022-ELV-002	525g	Low/Medium	N/a*	525g	0.01 GPM – instantaneous	-
023-ELV-001	441g	Low/Medium	N/a*	441g	0.01 GPM – instantaneous	-
026-ELV-001	453g	Low/Medium	N/a*	453g	0.01 GPM – instantaneous	-
028-ELV-001	442g	Low/Medium	N/a*	442g	0.01 GPM – instantaneous	-
028-ELV-002	455g	Low/Medium	N/a*	455g	0.01 GPM – instantaneous	-
028-ELV-003	357g	Low/Medium	N/a*	357g	0.01 GPM – instantaneous	-
029-ELV-001	357g	Low/Medium	N/a*	357g	0.01 GPM – instantaneous	-
029-ELV-003	436g	Low/Medium	N/a*	436g	0.01 GPM – instantaneous	-
030-ELV-003	231g	Low/Medium	N/a*	231g	0.01 GPM – instantaneous	-

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
032-ELV-001	332g	Low/Medium	N/a*	332g	0.01 GPM – instantaneous	-
032-ELV-002	462g	Low/Medium	N/a*	462g	0.01 GPM – instantaneous	-
032-ELV-003	460g	Low/Medium	N/a*	460g	0.01 GPM – instantaneous	-
032-ELV-004	754g	Low/Medium	N/a*	754g	0.01 GPM – instantaneous	-
033-ELV-001	462g	Low/Medium	N/a*	462g	0.01 GPM – instantaneous	-
033-ELV-002	462g	Low/Medium	N/a*	462g	0.01 GPM – instantaneous	-
034-ELV-001	275g	Low/Medium	N/a*	275g	0.01 GPM – instantaneous	-
034-ELV-002	275g	Low/Medium	N/a*	275g	0.01 GPM – instantaneous	-
034-ELV-003	325g	Low/Medium	N/a*	325g	0.01 GPM – instantaneous	-
034-ELV-004	225g	Low/Medium	N/a*	225g	0.01 GPM – instantaneous	-
035-ELV-001	250g	Low/Medium	N/a*	250g	0.01 GPM – instantaneous	-
035-ELV-002	250	Low/Medium	N/a*	250g	0.01 GPM – instantaneous	-
000-FST-001	300g	Low	Varies depending on exact location	300g	0.01 GPM – instantaneous	DB1
000-GEN-001	310g	Low	WNW	310g	0.01 GPM – instantaneous	DB8/DB1
000-GEN-002	310g	Low	NW	310g	0.01 GPM – instantaneous	DB2
000-GEN-007	190g	Low	Varies depending on exact location	190g	0.01 GPM – instantaneous	DB3
000-GEN-009	190g	Low	Varies depending on exact location	190g	0.01 GPM – instantaneous	DB8
000-GEN-021	1000g	Low	NE	1000g	0.01 GPM – instantaneous	DB1
033-GEN-001	100g	Low	S	100g	0.01 GPM – instantaneous	DB6
000-GEN-017	60g	Low	Varies depending on exact location	60g	0.01 GPM – instantaneous	DB8

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
000-GEN-018	110g	Low	Varies depending on exact location	110g	0.01 GPM – instantaneous	DB1
000-GEN-019	110g	Low	Varies depending on exact location	110g	0.01 GPM – instantaneous	DB1
000-GEN-020	55g	Low	Varies depending on exact location	55g	0.01 GPM – instantaneous	DB1
001a-GEN-001	385g	Low	WSW	385g	0.01 GPM – instantaneous	DB8
007-GEN-001	1000g	Low	N/NNW	1000g	0.01 GPM – instantaneous	DB2
009a-GEN-001	175g	Low	S	175g	0.01 GPM – instantaneous	DB8
010-GEN-002	500g	Low	NW	500g	0.01 GPM – instantaneous	DB3
015-LOT-001	250g	Low	N/a*	250g	0.01 GPM – instantaneous	-
024C-FDT-003	750g	Low	N/a*	750g	0.01 GPM – instantaneous	-
024C-FDT-004	750g	Low	N/a*	750g	0.01 GPM – instantaneous	-
024C-LOT-001	275g	Low	N/a*	275g	0.01 GPM – instantaneous	-
024C-LOT-002	275g	Low	N/a*	275g	0.01 GPM – instantaneous	-
024D-FST-001	50,000g	Low	Secondary containment dike	50,000g	0.01 GPM – instantaneous	DB1
024D-FST-002	50,000g	Low	Secondary containment dike	50,000g	0.01 GPM – instantaneous	DB1
024D-FST-003	50,000g	Low	Secondary containment dike	50,000g	0.01 GPM – instantaneous	DB1
024D-WST-001	2,000g	Low	Secondary containment dike	2,000	0.01 GPM – instantaneous	DB1
027-FST-001	5,000g	Low/Medium	N/NE	Contingent upon fuel delivery	Up to 10 GPM	DB4
027-FST-002	5,000g	Low/Medium	N/NE	Contingent upon fuel delivery	Up to 10 GPM	DB4
027-FST-003	5,000g	Low/Medium	N/NE	Contingent upon fuel delivery	Up to 10 GPM	DB4

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
027-FST-004	5,000g	Low/Medium	N/NE	Contingent upon fuel delivery	Up to 10 GPM	DB4
027-LOT-001	330g	Low	N/a*	330g	0.01 GPM – instantaneous	-
027-WST-001	300g	Low	N/NNE	300g	0.01 GPM – instantaneous	DB4
028B-GEN-001	70g	Low	WNW	70g	0.01 GPM – instantaneous	DB1
030A-FST-001	500g	Low	S	500g	0.01 GPM – instantaneous	DB9/1
031B-FST-001	20,000g	Low	Secondary containment dike	20,000g	0.01 GPM – instantaneous	DB4
031B-FST-002	20,000g	Low	Secondary containment dike	20,000g	0.01 GPM – instantaneous	DB4
031-FDT-001	750g	Low	N/a*	750g	0.01 GPM – instantaneous	-
031-FDT-002	750g	Low	N/a*	750g	0.01 GPM – instantaneous	-
031-FDT-003	750g	Low	N/a*	750g	0.01 GPM – instantaneous	-
031-LOT-001	500g	Low	N/a*	500g	0.01 GPM – instantaneous	-
031-WST-001	1000g	Low	N/a*	1000g	0.01 GPM – instantaneous	-
079-FST-003	275g	Low	Located below grade within secondary containment	275g	0.01 GPM – instantaneous	-
079-FST-004	275g	Low	Located below grade within secondary containment	275g	0.01 GPM – instantaneous	-
003-HVT-003	173g	Medium	Varies according to local topography	173g	<0.01 GPM – instantaneous	DB8
003-HVT-004	173g	Medium	Varies according to local topography	173g	<0.01 GPM – instantaneous	DB8
005-HVT-001	375g	Medium	Varies according to local topography	375g	<0.01 GPM – instantaneous	DB8
005-HVT-002	375g	Medium	Varies according to local topography	375g	<0.01 GPM – instantaneous	DB8

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
009a-HVT-002	112g	Medium	Varies according to local topography	112g	<0.01 GPM – instantaneous	DB8
009-HVT-001	134g	Medium	Varies according to local topography	134g	<0.01 GPM – instantaneous	DB8
024-HVT-005	582g	Medium	Varies according to local topography	582g	<0.01 GPM – instantaneous	DB1
024-HVT-006	582g	Medium	Varies according to local topography	582g	<0.01 GPM – instantaneous	DB1
024-HVT-007	556g	Medium	Varies according to local topography	556g	<0.01 GPM – instantaneous	DB1
024-HVT-008	556g	Medium	Varies according to local topography	556g	<0.01 GPM – instantaneous	DB1
024-HVT-010	342g	Medium	Varies according to local topography	342g	<0.01 GPM – instantaneous	DB1
025D-HVT-001	240g	Medium	Varies according to local topography	240g	<0.01 GPM – instantaneous	DB4
025-HVT-003	135g	Medium	Varies according to local topography	135g	<0.01 GPM – instantaneous	DB4
025-HVT-004	135g	Medium	Varies according to local topography	135g	<0.01 GPM – instantaneous	DB4
025-HVT-005	112g	Medium	Varies according to local topography	112	<0.01 GPM – instantaneous	DB4
025-HVT-006	159g	Medium	Varies according to local topography	159g	<0.01 GPM – instantaneous	DB4
0025J-HVT-001	240g	Medium	Varies according to local topography	240g	<0.01 GPM – instantaneous	DB4
026-HVT-003	150g	Medium	Varies according to local topography	150 g	<0.01 GPM – instantaneous	DB1
027A-HVT-001	245g	Medium	Varies according to local topography	245g	<0.01 GPM – instantaneous	DB4
027A-HVT-002	257g	Medium	Varies according to local topography	245g	<0.01 GPM – instantaneous	DB4
027-HVT-001	240g	Medium	Varies according to local topography	240g	<0.01 GPM – instantaneous	DB4
035-HVT-001	321g	Medium	Varies according to local topography	321g	<0.01 GPM – instantaneous	DB4
076-HVT-001	113g	Medium	Varies according to local topography	113g	<0.01 GPM – instantaneous	DB1
079-HVT-001	116g	Medium	Varies according to local topography	116g	<0.01 GPM – instantaneous	DB7

Tank ID	Shell Volume	Potential for Failure	Anticipated spill direction	Maximum Releasable Vol.	Release Rate	Drainage basin receptor
083-HVT-001	146g	Medium	Varies according to local topography	146g	<0.01 GPM – instantaneous	DB4
084-HVT-001	146g	Medium	Varies according to local topography	146g	<0.01 GPM – instantaneous	DB4
088-HVT-001	290g	Medium	Varies according to local topography	290g	<0.01 GPM – instantaneous	DB7
090-HVT-001	229g	Medium	Varies according to local topography	229g	<0.01 GPM – instantaneous	DB1
092-HVT-001	164g	Medium	Varies according to local topography	164g	<0.01 GPM – instantaneous	DB5
095-HVT-001	126g	Medium	Varies according to local topography	126g	<0.01 GPM – instantaneous	DB4/DB7

Appendix L - Emergency Contact Information

L1.0 Emergency Contact Information

Table 1 - Primary Emergency Contact Personnel Information for GSFC

Name	Title	Organization	Address	Phone Number(s)	Radio Call Sign
IC	Protective Services Supervisory (Lieutenant)	Protective Services Division	NASA Goddard Space Flight Center 8800 Greenbelt Rd. Greenbelt, MD 20771	(301) 286-8661	“Security Supervisor” on the Security talk group
Brenden J. Kettner	EMO	Protective Services Division	Work: NASA Goddard Space Flight Center Emergency Management Office 8800 Greenbelt Rd. Greenbelt, MD 20771 Home: 10244 Sandpiper Lane Atlantic, VA 23303	Work: (757) 824-1985 Cell: (757) 894-7235	EM1

Table 2 - External Agency Contact Information (notification made through SOC)

Agency	Address	Phone Number	What to Notify
Prince George’s County Fire Department	9201 Basil Court Suite 452 Largo, MD 20774	911 or (301) 883-5200	Fire or explosion. Submit copy of ICP.
Local Emergency Planning Commission (LEPC)	Prince George’s County LEPC c/o Prince George’s County Fire / EMS Department Public Safety Complex 7915 Anchor Street Landover, Maryland, 20785	(301) 324-4400	Submit copy of ICP.
Hospital	Doctor’s Community Hospital 8118 Good Luck Road Lanham, MD 20706	(301) 552-8118	Non-trauma related injury, illness, or medical emergency. Submit copy of ICP.

Appendix M - Maps and Figures

M1.0 Maps and Figures

This appendix provides the maps and figures referred to in the ICP. The figures for the bulk fuel areas at Buildings 24 and 31 depict the routes of underground and aboveground piping associated with the aboveground tanks.

List of Figures in Appendix M

Figure 1 - Facility Map

Figure 2 - Outlying Areas

Figure 3 - Contour Map

Figure 4 - Storm Sewer System

Figure 5 - Sanitary Sewer System

Figure 6 - Fire Protection Systems

Figure 7 - Oil Storage Locations

Figure 8 - Bulk Fuel Building 24

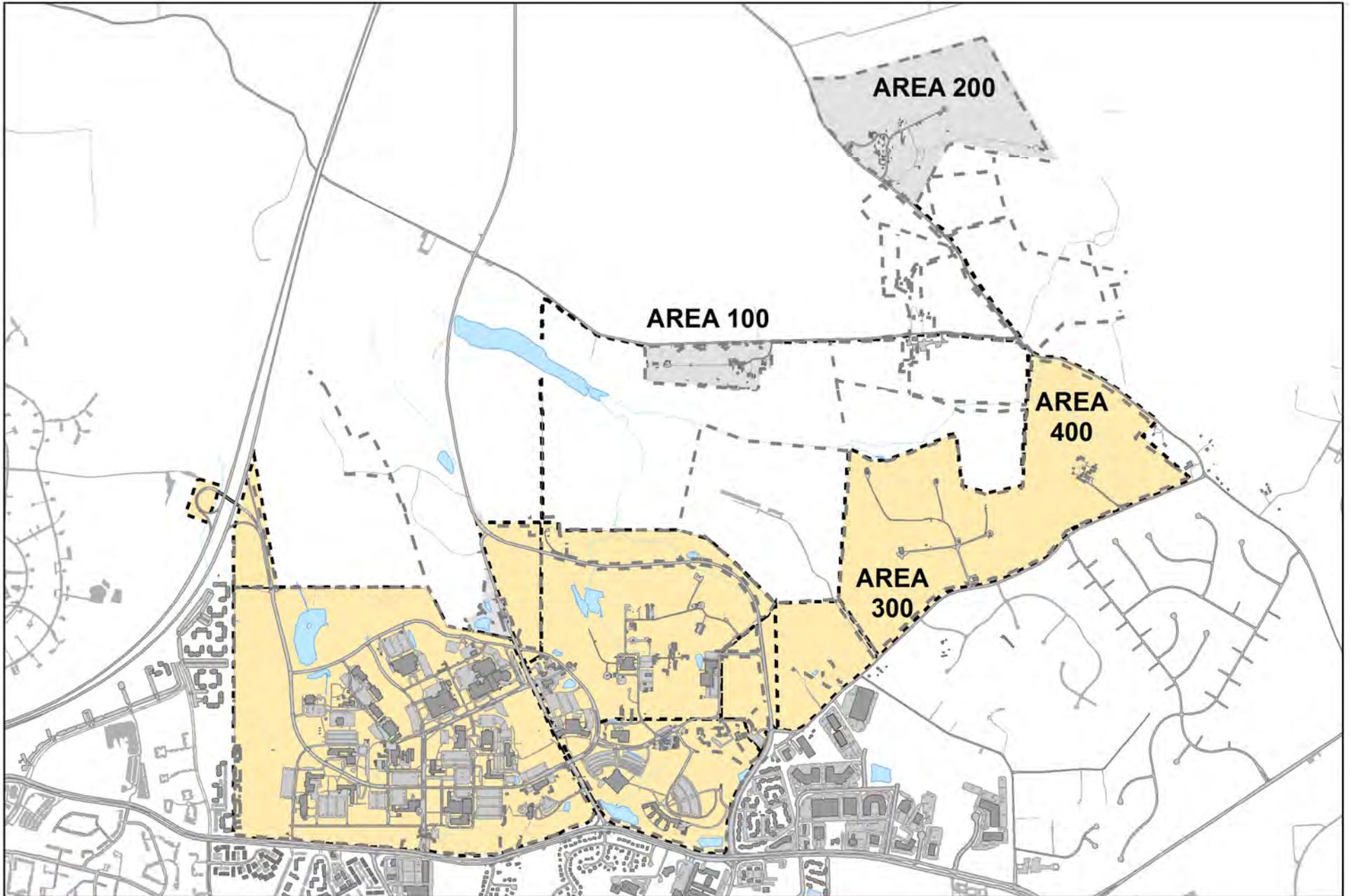
Figure 9 - Bulk Fuel Building 31

Figure 10 - Bulk Fuel Building 27

Figure 11 - Drainage Basins Main Site

Figure 12 - Drainage Basins Outlying Areas

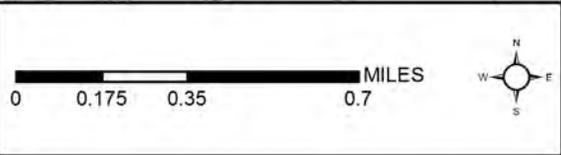
Figure 13 - Bldg. 27A Layout and Evacuation Plan

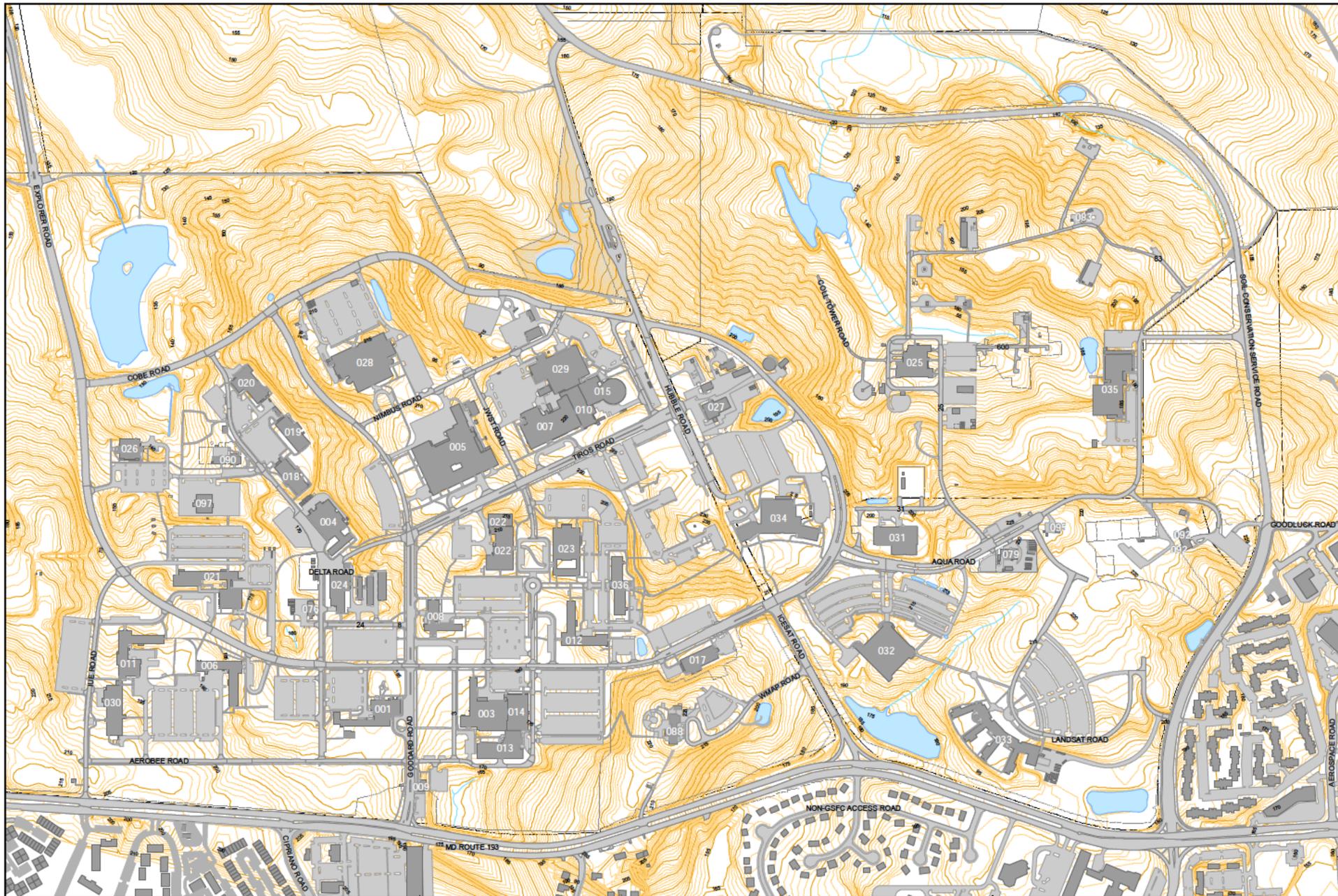



**MAIN CAMPUS AND
OUTLYING LOCATIONS**
 NASA - GODDARD SPACE FLIGHT CENTER
 MAY 2018

LEGEND:

 IMPERVIOUS SURFACES	 GSFC PROPERTY	 NATURAL WATERBODY
 BUILDING	 OUTGRANT	 STREAMS





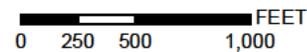
**ELEVATION CONTOURS
MAIN CAMPUS SITE**

NASA GODDARD SPACE FLIGHT CENTER
MAY 2018

LEGEND:

-  IMPERVIOUS SURFACES
-  BUILD NG

-  NATURAL WATERBODY
-  STREAMS
-  NASA PROPERTY BOUNDARY



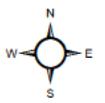
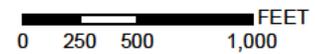


STORM DRAINAGE

NASA GODDARD SPACE FLIGHT CENTER
MAY 2018

LEGEND:

-  IMPERVIOUS SURFACES
-  BUILDING
-  NATURAL WATERBODY
-  STREAMS
-  NASA PROPERTY BOUNDARY
-  STORM WATER CONVEYANCE
-  STORM WATER INLET

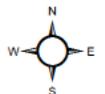
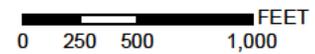


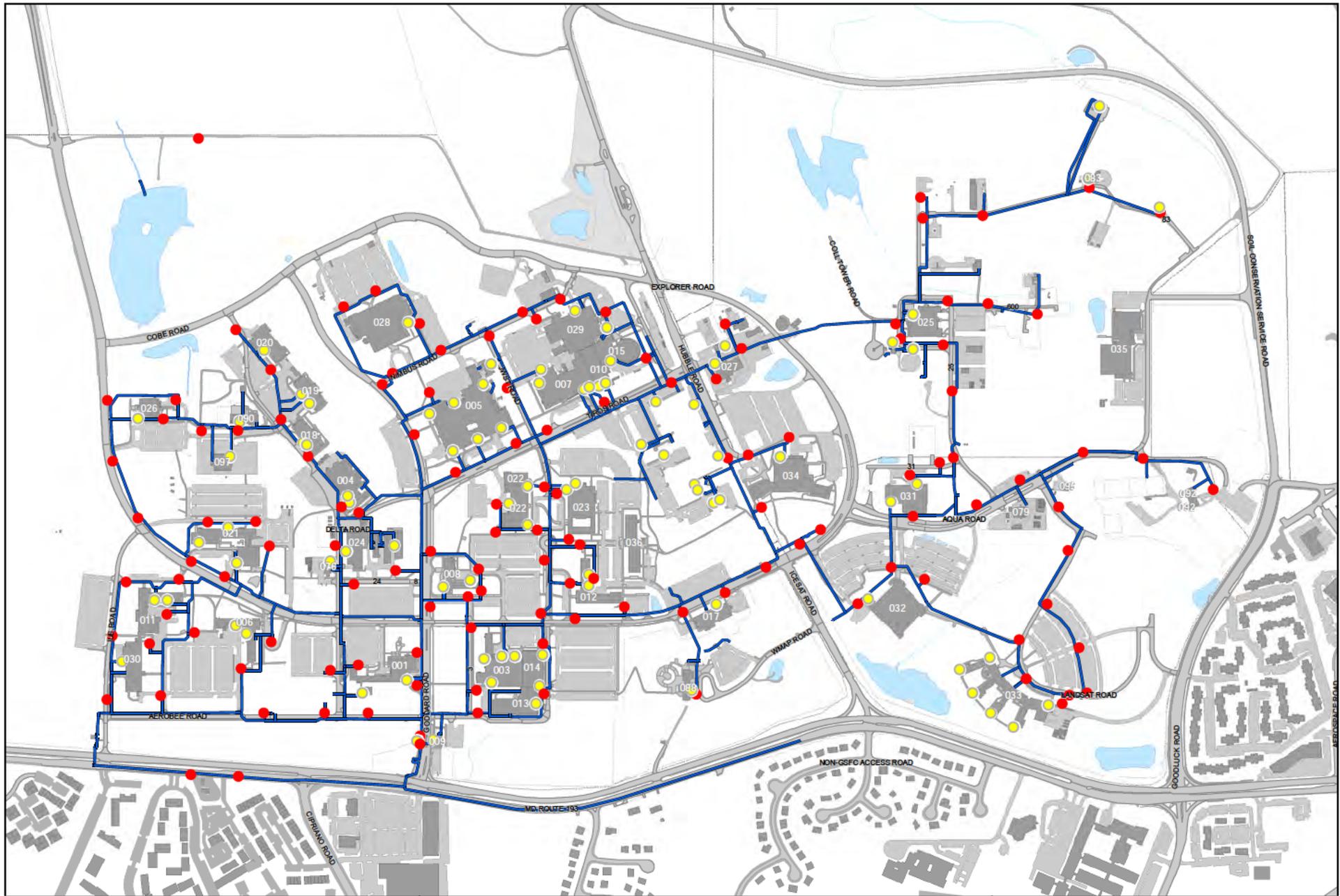


**SANITARY SEWER SCHEMATICS
MAIN CAMPUS SITE
NASA GODDARD SPACE FLIGHT CENTER
MAY 2018**

LEGEND:

- IMPERVIOUS SURFACES
- NATURAL WATERBODY
- SANITARY SEWER CONVEYANCE
- STREAMS
- SANITARY SEWER INLET
- NASA PROPERTY BOUNDARY
- BUILDING

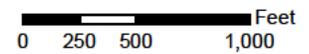


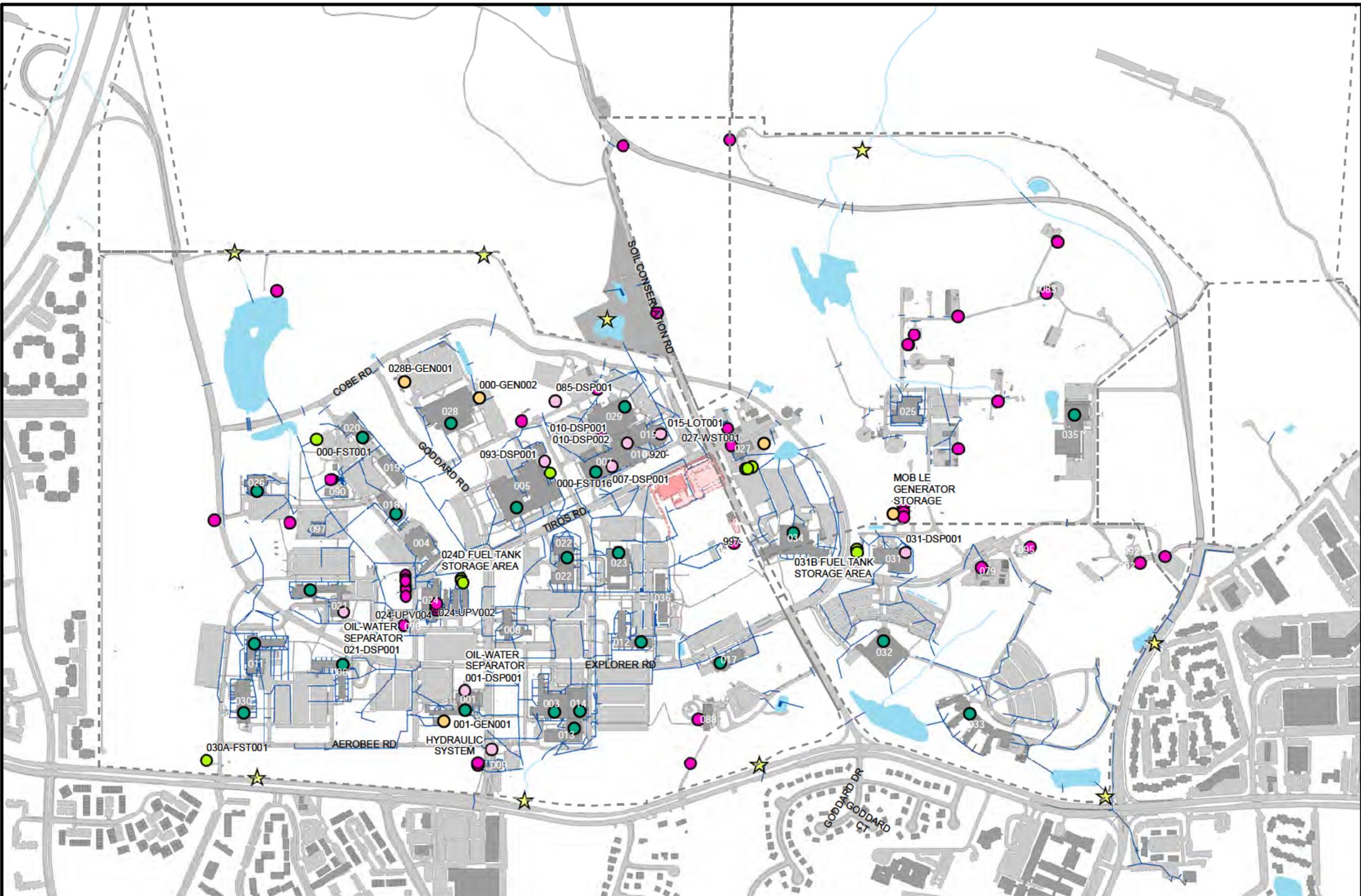


**FIRE PROTECTION SYSTEMS
MAIN CAMPUS SITE**
NASA GODDARD SPACE FLIGHT CENTER
MAY 2018

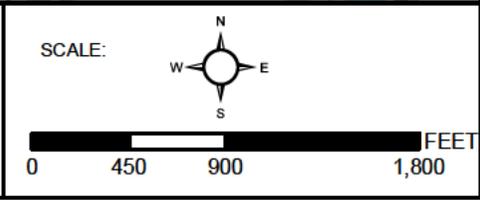
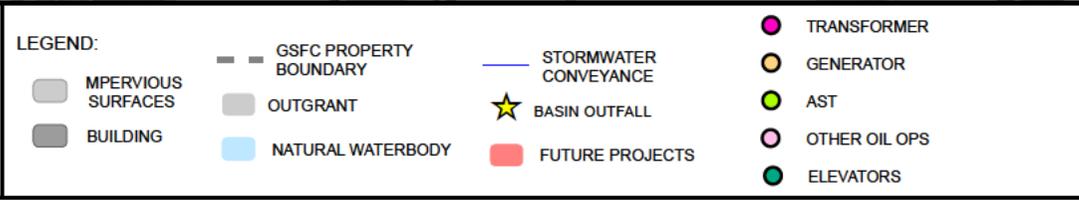
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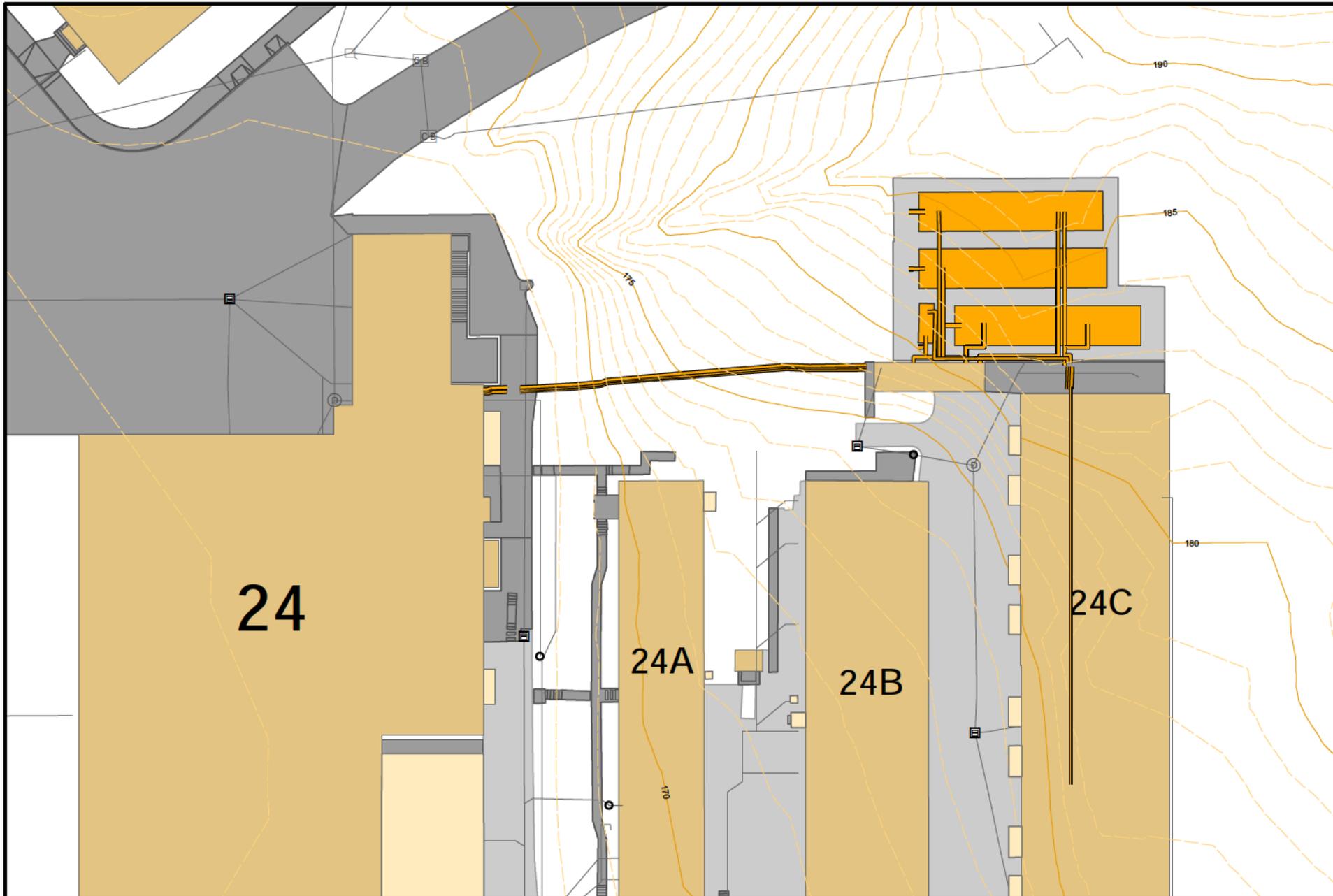
- | | | |
|---------------------|-------------------|----------------------------|
| IMPERVIOUS SURFACES | NATURAL WATERBODY | FIRE DEPARTMENT CONNECTION |
| BUILDING | STREAMS | FIRE HYDRANT |
| OUTGRANT | GSFC PROPERTY | DOMESTIC WATER LINE |






OIL STORAGE MAP
 NASA GODDARD SPACE FLIGHT CENTER
 NOVEMBER 2018
 Appendix M Figure 7





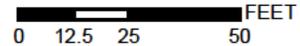
BUILDING 24 FUEL LINE

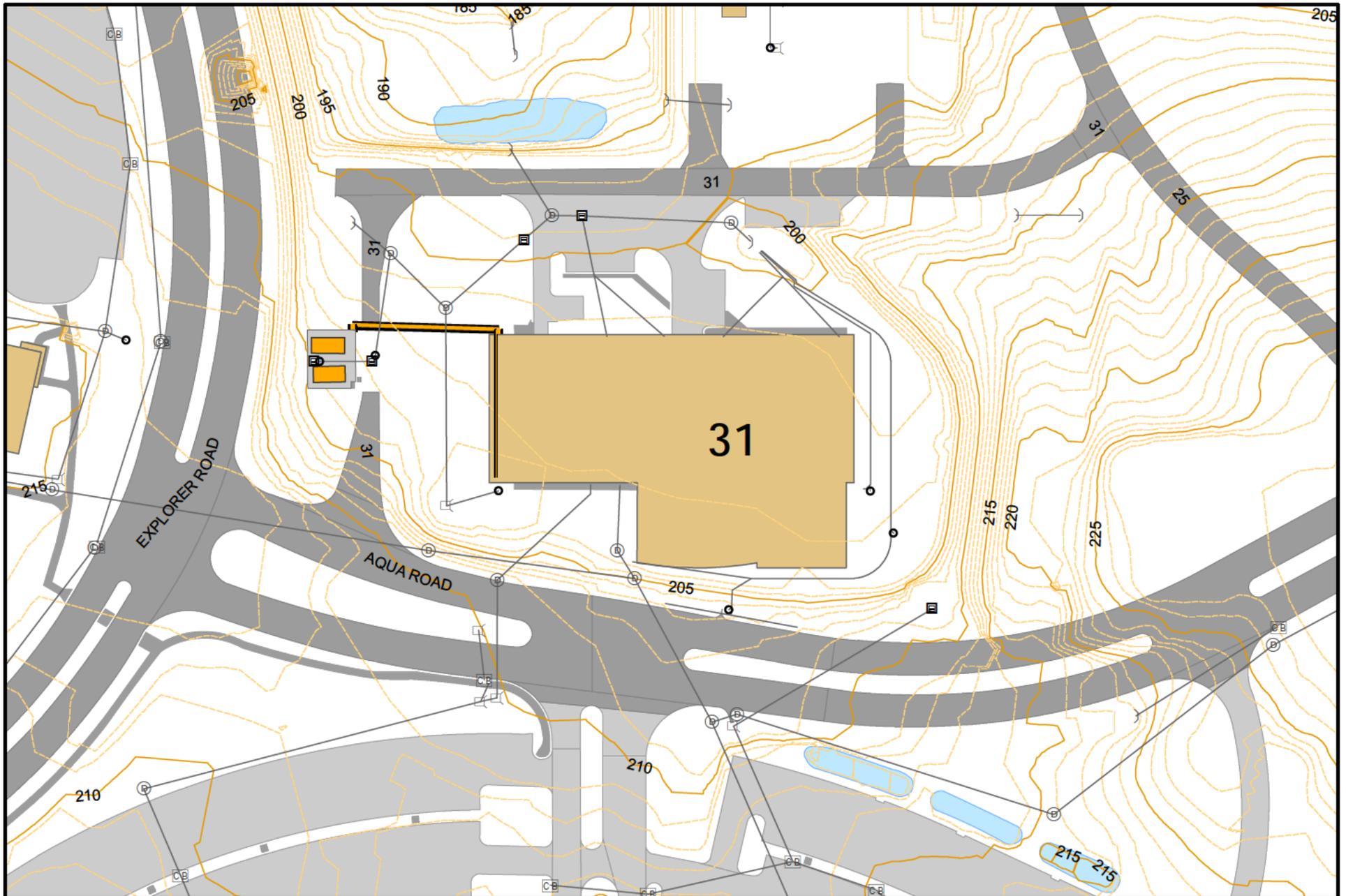
NASA GODDARD SPACE FLIGHT CENTER
NOVEMBER 2018

LEGEND:

- | | | |
|---------------------|-----------------------|-------------------|
| IMPERVIOUS SURFACES | AST | NATURAL WATERBODY |
| PARKING LOTS | BUILDING 24 FUEL LINE | STREAMS |
| BUILDING | ELEVATION CONTOURS | |

SCALE:





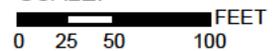
BUILDING 31 FUEL LINE

NASA GODDARD SPACE FLIGHT CENTER
NOVEMBER 2018

LEGEND:

- | | | |
|---------------------|-----------------------|-------------------|
| IMPERVIOUS SURFACES | BUILDING | NATURAL WATERBODY |
| PARKING LOTS | BUILDING 31 FUEL LINE | STREAMS |
| BUILDING | ELEVATION CONTOURS | |

SCALE:



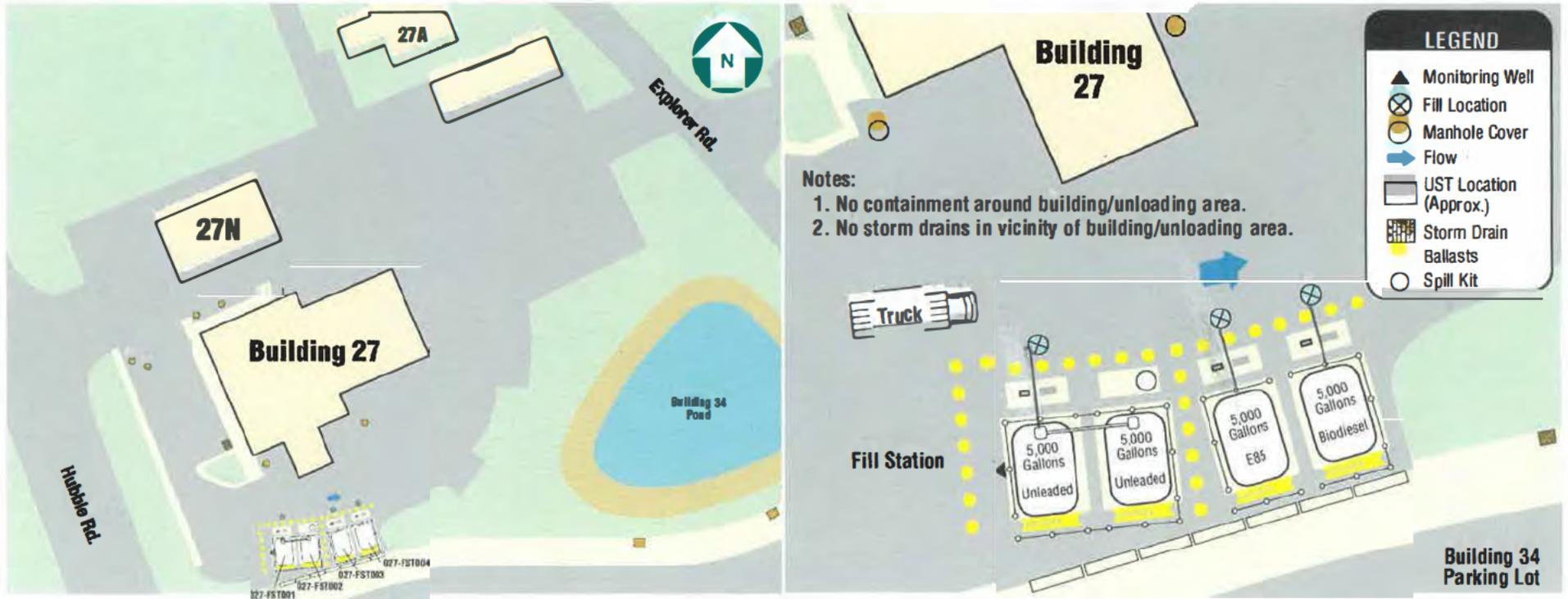
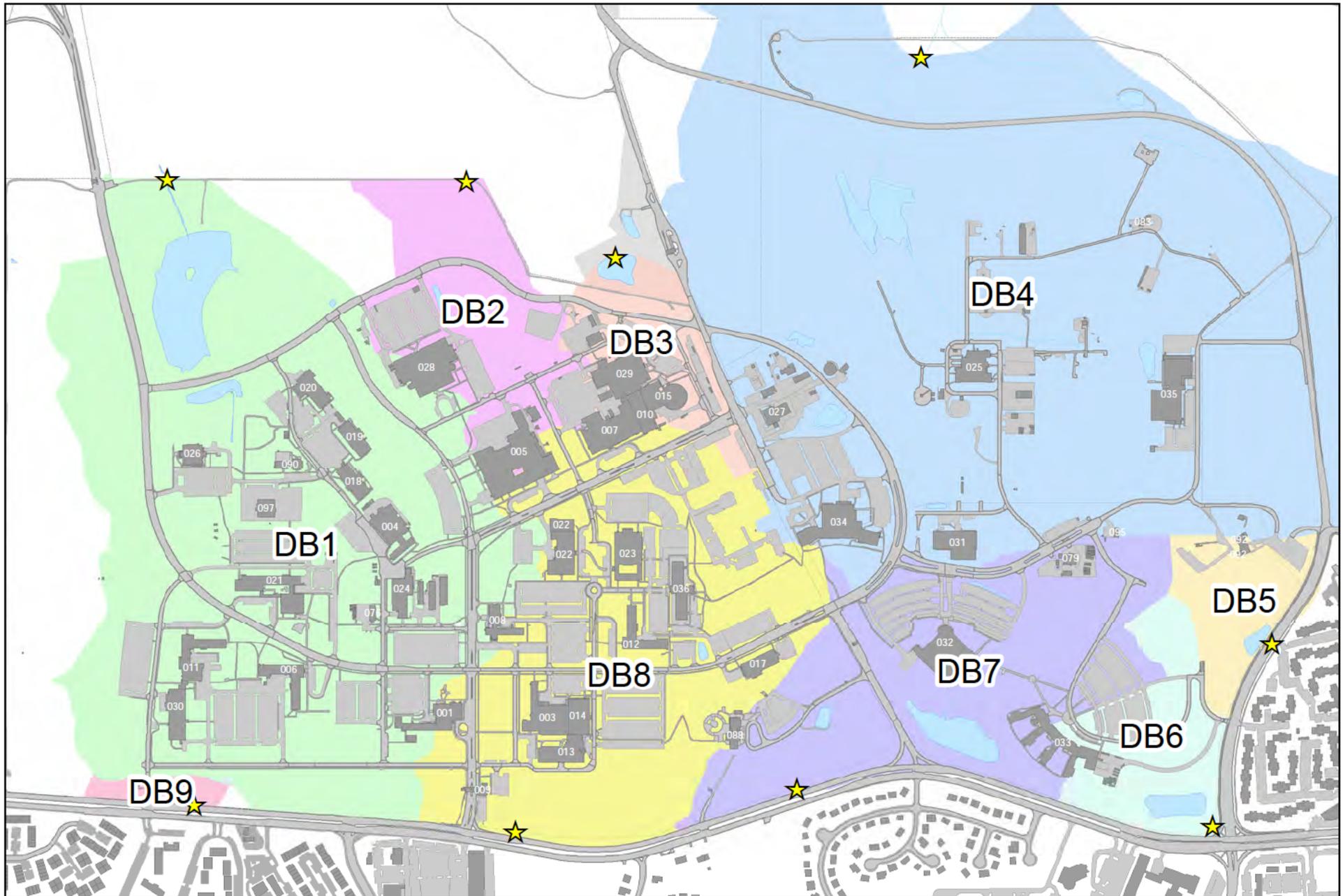
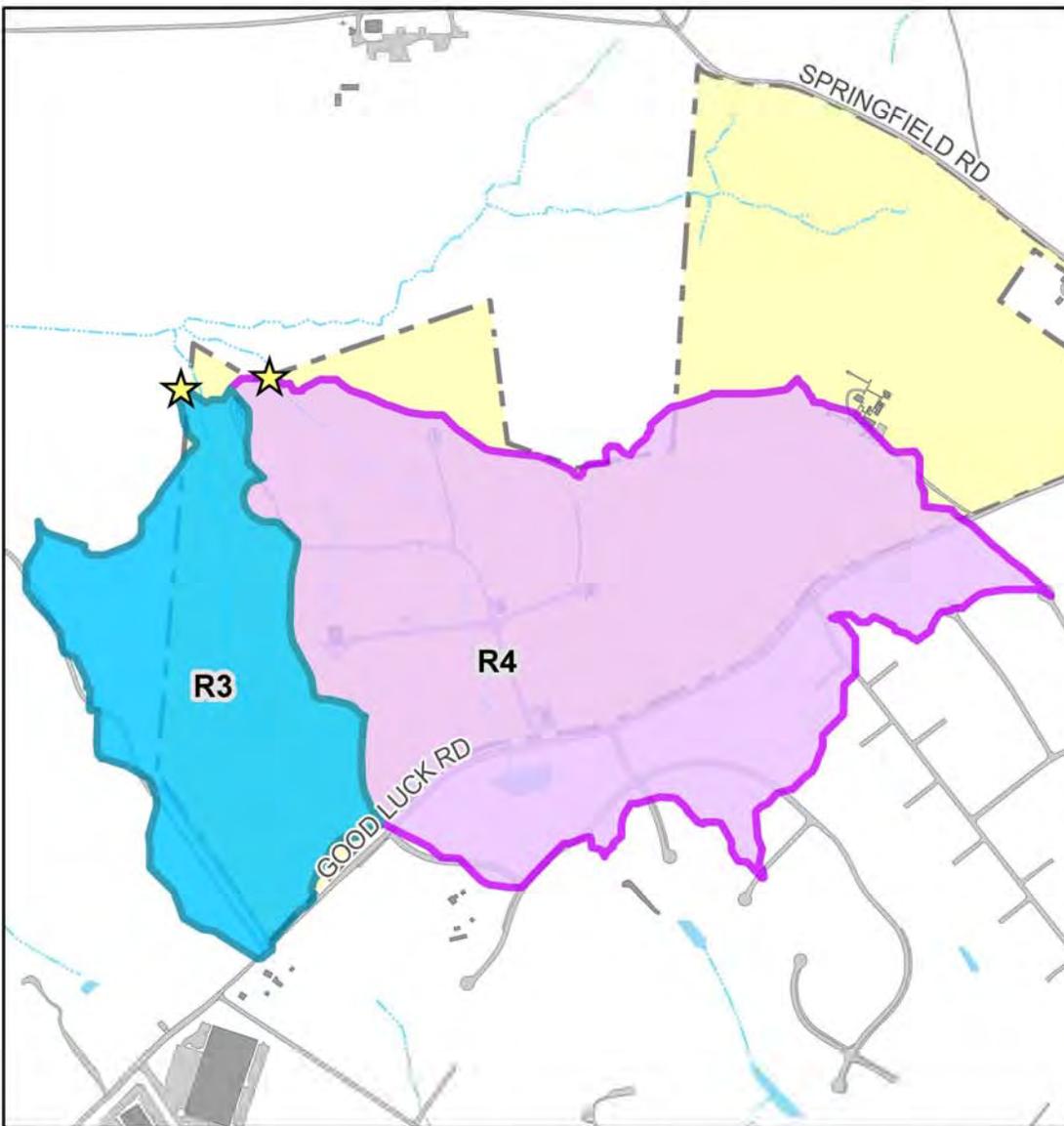


Figure 10

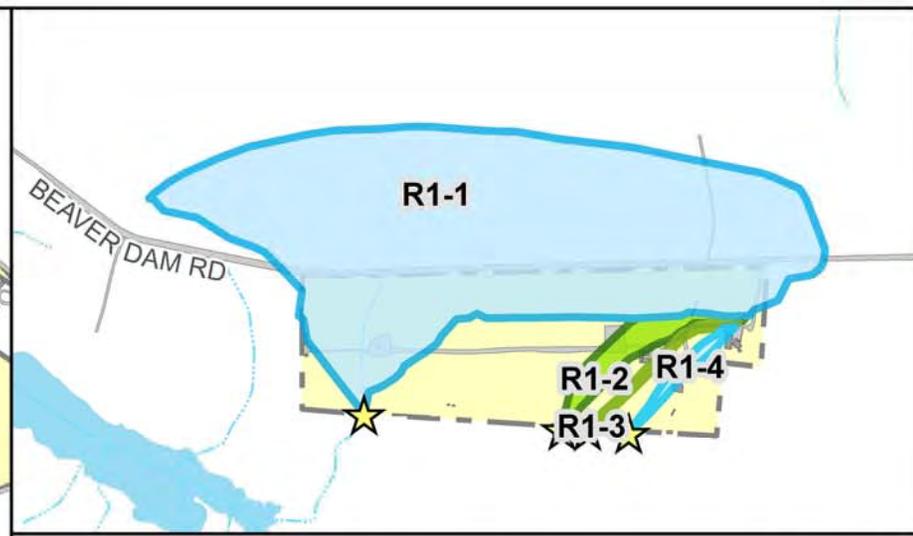
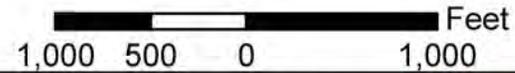


 <p>DRAINAGE BASINS NASA GODDARD SPACE FLIGHT CENTER MAY 2018</p>	<p>LEGEND:</p> <ul style="list-style-type: none">  IMPERVIOUS SURFACES  BUILDING  NATURAL WATERBODY  STREAMS 	<p> DRAINAGE BASIN 1</p>	<p> DRAINAGE BASIN 5</p>	<p> DRAINAGE BASIN 9</p>
		<p> DRAINAGE BASIN 2</p>	<p> DRAINAGE BASIN 6</p>	<p> DRAINAGE BASIN 7</p>
		<p> DRAINAGE BASIN 8</p>	<p> DRAINAGE BASIN 8</p>	

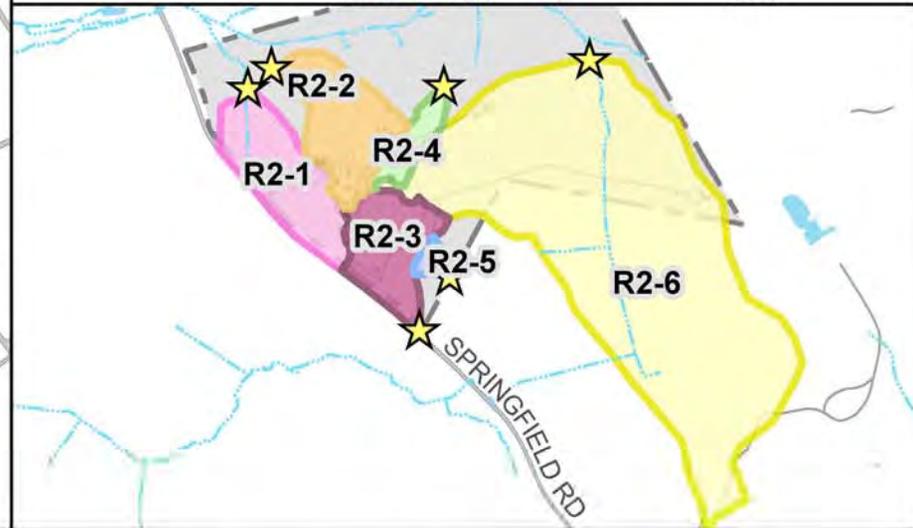
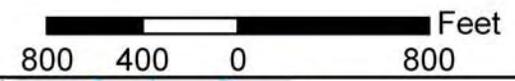




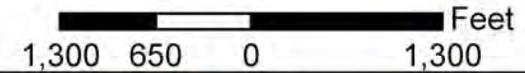
Areas 300 and 400



Area 100



Area 200



DRAINAGE BASINS

Outlying Areas Drainage Basin Map Key

NASA - Goddard Space Flight Center
September 2015

LEGEND

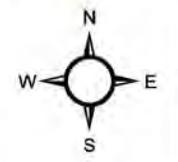
- IMPERVIOUS SURFACES
- BUILDINGS
- NATURAL WATERBODY
- STREAMS

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- DRAINAGE BASIN R1-2
- DRAINAGE BASIN R1-3
- DRAINAGE BASIN R1-4

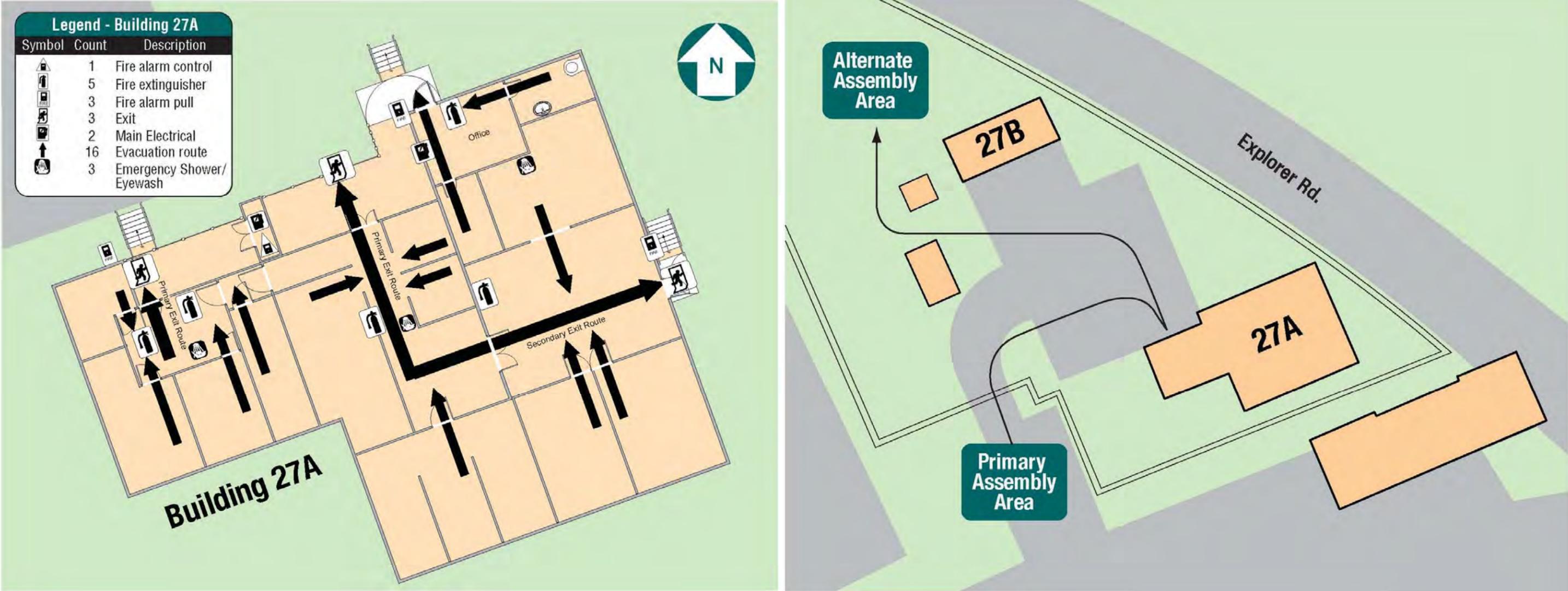
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- DRAINAGE BASIN R2-5
- DRAINAGE BASIN R2-6
- DRAINAGE BASIN R3
- DRAINAGE BASIN R4

OUTFALL



Building 27A Layout and Evacuation Plan



Appendix N - Change History Log

This appendix contains a log of amendments and corresponding PE certifications for the 2019 ICP. For previous changes, please refer to previous ICPs.

Revision	Effective Date	Descripton of Changes