Kennedy NASA Procedural Requirements

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Responsible Office: Center Operations, Environmental Program Branch

KSC Environmental Requirements

**National Aeronautics and
Space Administration
John F. Kennedy Space Center**

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PREFACE

P.1 Purpose

Requirements listed within this document have been issued to ensure Kennedy Space Center (KSC) compliance with federal, state, and local environmental laws and regulations. This document details responsibilities of the KSC Environmental Program Branch, other KSC organizational elements, the KSC Environmental Working Group, and Energy Working Group members.

P.2 Applicability

These requirements apply to all KSC organizational elements, including tenant organizations.

P.3 Authority

NPD 8500.1 NASA Environmental Management
NPR 8553.1 NASA Environmental Management System (EMS)

P.4 References

This document contains reference to governing requirements. This document contains procedures for KSC Environmental controls, and documentation.

P.5 Cancellation

This document cancels and supersedes KNPR 8500.1 Basic, KSC Environmental Requirements.

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Director, Center Operations

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CHAPTER 1. LIST OF REFERENCES

The following section contains a list of documents to be utilized for compliance to federal, state, regional, and other (local) requirements which are applicable to KSC.

1.1 Federal Documents

a. Presidential Executive Orders
http://www.archives.gov/federal_register/executive_orders/executive_orders.html
(1) EO 11988, "Floodplain Management"
(2) EO 11990, "Protection of Wetlands "
(3) EO 12088, "Federal Compliance with Pollution Control Standards"
Revoked by: EO 13148, April 21, 2000 (in part), Executive Order 13148
(4) Executive Order 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements"
(5) Executive Order 12898, "Environmental Justice"
(6) Executive Order 13101, "Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition"
(7) Executive Order 13123, "Greening the Government Through Efficient Energy Management"
(8) Executive Order 13148, "Greening the Government through Leadership in Environmental Management"
(9) Executive Order 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency"
(10) Executive Order 13150, "Federal Workforce Transportation"
(11) Executive Order 13287, "Preserve America"

b. Federal Congressional Acts http://laws.fws.gov/lawsdigest/reslaws.html
(1) The Archeological and Historic Preservation Act of 1974
http://www2.cr.nps.gov/laws/archpreserv.htm ,
http://www2.cr.nps.gov/laws/laws.htm
Historic Preservation Acts (includes Archeological)
(2) The Clean Air Act (CAA) 42 U.S.C. s/s 7401 et seq.
(3) The Clean Water Act (CWA) 33 U.S.C. s/s 121 et seq.
(4) The Comprehensive Environmental Response Compensation and Liability Act of 1980, as Amended 42 U.S.C. s/s 9601 et seq.
(5) The Coastal Zone Management Act of 1972 as Amended
(6) The Emergency Planning & Community Right-To-Know Act (EPCRA) 42 U.S.C. 11011 et seq.
(7) The Endangered Species Act 7 U.S.C. 136; 16 U.S.C. 460 et seq.
(8) The ENERGY POLICY ACT OF 1992 (Public Law 102-486)
(9) The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) 7 U.S.C. s/s 135 et seq.
(10) The Hazardous Materials Transportation Act
(11) The National Energy Conservation Policy Act (42 USC 8287) 42 U.S.C. 8252 et. Seq.
(12) The National Environmental Policy Act (NEPA) of 1969 42 U.S.C. 4321-4347
(13) The National Historic Preservation Act of 1966 as amended through 2000
(14) The NOISE CONTROL ACT OF 1972 42 U.S.C. 4901 et seq.

(15) The Occupational Safety and Health Act (OSHA) 29 U.S.C. 651 et seq.
(16) The Oil Pollution Act of 1990 (OPA) 33 U.S.C. 2702-2761
(17) The Pollution Prevention Act (PPA) 42 U.S.C. 13101 and 12102 s/s et seq.
(18) The Resource Conservation and Recovery Act (RCRA) 42 U.S.C. s/s 321 et seq.
(19) The Safe Drinking Water Act (SDWA) 42 U.S.C. s/s 300f et seq.
(20) The Superfund Amendments and Reauthorization Act 42 U.S.C. 9601 et seq. or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)
(21) The Toxic Substances Control Act (TSCA) 15 U.S.C. s/s 2601 et seq.

1.2 Codified Federal Regulations

http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1

a. 10 CFR, Chapter I, "Nuclear Regulatory Commission"
   (1) 10 CFR, Part 435, "Energy Conservation Voluntary Performance Standards for New Buildings; Mandatory for Federal Buildings", Parts 200-499
   (2) 10 CFR, Part 436, Federal Energy Management and Planning Programs (includes Life Cycle Costing), Parts 200-499
b. 14 CFR, Chapter V, "NASA", Parts 1200-1299
c. 15 CFR, Chapter IX, "National Oceanic and Atmospheric Administration", Parts 900-999
d. 29 CFR, Chapter XVII, Occupational Safety and Health Administration
   (1) 29 CFR, 1910 "Occupational Safety and Health Standards" , Parts 1910
   (2) 29 CFR, 1926 "Safety and Health Regulations for Construction" , Parts 1926
e. 32 CFR, Part 989, "Environmental Impact Analysis Process", Parts 989
f. 33 CFR, "Navigation and Navigable Waters", Parts 1-124, 125-199, 200-399, 400-499
g. 36 CFR, "Parks, Forests and Public Property", Parts 1-199, 200-299, 300-399, 400-499, 500-599, N/A 600, 700-799, 800-899, 900-999, 1000-1099, 1100-1199, 1200-1299, and 1400-1499.
h. 40 CFR, "Protection of Environment"
   (1) 40 CFR, Part 50 – 87, "Air Programs", Parts 50-51, 52.01-52.1018, 52.1019-end, 53-59, 60.1-end, 60, 61-62, 63.1-63.599, 63.600-63.1199, 63.1200-63.1439, 63.1440-end, 64-71, 72-80 , 81-85, 86.1-86.599, 86.600-end, and 87-99.
   (2) 40 CFR, Part 82, "Protection of Stratospheric Ozone", Parts 81-85
   (3) 40 CFR, Part 112, "Oil Pollution Prevention", Parts 100-135
   (4) 40 CFR, Part 125, "Criteria and Standards for NDPES", Parts 100-135
   (5) 40 CFR, Part 131, "Water Quality Standards", Parts 100-135
   (6) 40 CFR, Part 141, "National Primary Drinking Water Regulations" , Parts 136-149
   (7) 40 CFR, Part 143, "National Secondary Drinking Water Regulations" , Parts 136-149
   (8) 40 CFR, Part 156, "Labeling Requirements for Pesticides and Devices" , Parts 150-189

(9) 40 CFR, Part 157, “Packaging Requirements for Pesticides and Devices” , Parts 150-189
(10) 40 CFR, Part 173 “Shippers- General Requirements for Shipment and Packaging” , Parts 150-189
(11) 40 CFR, Part 260-265, “Hazardous Waste Management” , Parts 260-265
(12) 40 CFR, Part 268, “Land Disposal Restrictions” , Parts 266-299
(13) 40 CFR, Part 273 “Standards for Universal Waste Management” , Parts 266-299
(14) 40 CFR, Part 279 “Standards for the Management of Used Oil” , Parts 266-299
(15) 40 CFR, Part 280, “Standards for Underground Storage Tanks” , Parts 266-299
(16) 40 CFR, Part 300, “National Oil and Hazardous Substances Pollution Contingency Plan “, Parts 300-399
(17) 40 CFR, Part 302, “Designation, Reportable Quantities, and Notification”, Parts 300-399
(18) 40 CFR, Part 311, “Worker Protection”, Parts 300-399
(19) 40 CFR, Part 355, “Emergency Planning and Notification”, Parts 300-399
(20) 40 CFR, Part 370, “Hazardous Chemical Reporting: Community Right-to-Know”, Parts 300-399
(21) 40 CFR, Part 372, “Toxic Chemical Release Reporting”, Parts 300-399
(22) 40 CFR, Part 503, “Standards for the Use or Disposal of Sewage Sludge,” Parts 425-699
(23) 40 CFR, Part 761, “Polychlorinated Biphenyls” , Parts 700-789
(24) 40 CFR, Subpart 1508.9 (a), “Environmental Assessment (EA)” 40 CFR Parts 1500-1508 1508.9 Environmental assessment. NEPA Compliance Guide

i. 48 CFR, 266 Subpart G, “Universal Wastes - Recycling Lead-Acid Batteries 40CFR Part-273.2 266-299
j. 49 CFR, “Transportation”
(1) 49 CFR Part 171.15, “HMTA”, Parts 100-185
(2) 49 CFR, Part 173.28(c), “Storing Waste in Authorized Container”, Parts 100-185
k. 50 CFR, “Wildlife and Fisheries”, Parts 1-16, 17.1-17.95, 17.96-17.99(h), 17.99(i)-17end, 18-199, 200-299, 300-399, 400-499, 500-599, and 600-end

1.3 State and Regional Documents

a. Florida Statutes (FS) http://www.flsenate.gov/Statutes/ http://www.flsenate.gov/Statutes/index.cfm?Mode=View%20Statutes&Submenu=1&Tab=statutes

(1) Florida Statute 373, “Water Resources” Chapter 373
(2) Florida Statute 376, “Pollutant Discharge Prevention and Removal” Chapter 376
(3) Florida Statute 380, Part III, “Coastal Planning and Management” Chapter 380
(4) Florida Statute 403, “Environmental Control” Chapter 403

b. Florida Regulations (Florida Administrative Code (FAC)) http://fac.dos.state.fl.us/
(1) TITLE 5E, “Pesticides” DEPARTMENT OF AGRICULTURE AND

CONSUMER SERVICES

(2) CHAPTER 62, "DEPARTMENT OF ENVIRONMENTAL PROTECTION
- (a) 62-63 Local Tank Regulations
- (b) 62-64 Stationary Compression Notification
- (c) 62-160, "Quality Assurance"
- (d) 62-204, "Air Pollution Control"
- (e) 62-210, "Stationary Sources - General Requirements"
- (f) 62-212, "Stationary Sources - Preconstruction Review"
- (g) 62-213, "Operation Permits for Major Sources of Air Pollution"
- (h) 62-242, "Motor Vehicle Emission Standards and Test Procedures"
- (i) 62-243, "Tampering With Motor Vehicle Air Pollution Control Equipment"
- (j) 62-256, "Open Burning and Frost Protection Fires"
- (k) 62-257, "Asbestos Program"
- (l) 62-281, "Motor Vehicle Air Conditioning Refrigerant Recovery and Recycling"
- (m) 62-296, "Stationary Sources - Emission Standards"
- (n) 62-297, "Stationary Sources - Emissions Monitoring"
- (o) 62-330, "Environmental Resource Permitting"
- (p) 62-520, "Ground Water Classes, Standards, and Exemptions"
- (q) 62-532, "Water Well Permitting and Construction Requirements"
- (r) 62-550, "Drinking Water Standards"
- (s) 62-600, "Domestic Wastewater Facilities"
- (t) 62-620, "Wastewater Facility Permitting"
- (u) 62-660, "Industrial Wastewater Facilities"
- (v) 62-701, "Solid Waste Management Facilities"
- (w) 62-710, "Used Oil Management"
- (x) 62-730, "Hazardous Waste"
- (y) 62-737 "The Management of Spent-Mercury-Containing Lamps and Devices"
- (z) 62-740, "Petroleum Contact Water"
- (aa) 62-761, "Underground Storage Tank Systems"
- (bb) 62-762, " Above Ground Storage Tank Systems"
- (cc) 62-769, "Florida Petroleum Liability Insurance and Restoration Program"
- (dd) 62-770, "Petroleum Contamination Site Cleanup Criteria"
- (ee) 62-771, "Petroleum Contamination Site Priority Ranking Rule"
- (ff) 62-777, "Contaminant Cleanup Target Levels"
- (gg) 62-780, "Contaminated Site Cleanup Criteria"

(3) Florida Administrative Code 64 DEPARTMENT OF HEALTH, 64E-6, "Standards for Onsite Sewage Treatment and Disposal Systems", and Florida Administrative Code, Chapter 64E-16 "Biomedical Waste"

1.4 Other Regulations

a. TITLE 40C, St. Johns River Water Management District, "Water Management Regulations"
http://www.sjrwmd.com/programs/outreach/conservation/restrictions/index.html

b. Brevard County Ordinance 89.09, "Onsite Sewage Disposal Systems"
http://www.brevardcounty.us/ ; http://fws.municode.com/CGI-

BIN/om_isapi.dll?depth=3&infobase=10473.nfo&softpage=newTestTOCnonFrame

1.5 NASA and KSC Documents

a. NASA Issuances
   (1) NASA Policy Directive
   NOTE: NASA Procedures and Guidelines (NPGs) were converted to NASA Procedural Requirements (NPRs) on 12/05/03. However, classification numbers were not changed. If you are looking for a NPG, please refer to the corresponding NPR. http://nodis3.gsfc.nasa.gov/

   (a.) NPD 1440.6, as revised, "NASA Records Management"
   (b.) NPD 2800.1, as revised, "Managing Information Technology"
   (c.) NPD 8500.1, as revised, "NASA Environmental Management"

   (2) NASA Procedural Requirements
   (a) NPR 1400.1, as revised, "NASA Directives System Procedural Requirements"
   (b) NPR 1441.1, as revised, "NASA Records Retention Schedules"
   (c) NPR 7120.5, as revised, "NASA Program and Project Management Processes and Requirement"
   (d) NPR 8553.1, as revised, "NASA Environmental Management System (EMS)"
   (e) NPR 8570.1, as revised, "Energy Efficiency and Water Conservation"
   (f) NPR 8580.1, as revised, "Implementing The National Environmental Policy Act and Executive Order 12114"
   (g) NPR 8621.1, as revised, "NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping"
   (h) NPR 8715.2, as revised, "NASA Emergency Preparedness Plan Procedural Requirements"
   (i) NPR 8715.3, as revised, "NASA General Safety Program Requirements"

b. KSC Issuances
   (1) Kennedy Policy Directives
   http://www.ksc.nasa.gov/docs/management/kmi.html
   (a) KNPD 1860.1, as revised, "KSC Radiation Protection Program"
   (b) KNPD 8500.1, as revised, "KSC Environmental Management"

   (2) Kennedy Procedural Requirements
   http://www.ksc.nasa.gov/docs/management/khb.html
   (a) KNPR 1860.1, as revised, "KSC Ionizing Radiation Protection Program"
   (b) KNPR 1860.2, as revised "KSC Non-Ionizing Radiation Protection Program"
   (c) KNPR 1870.1 as revised, "KSC Sanitation Program"
   (d) KNPR 4000.1 as revised, "Supply Support System Manual"
   (e) JHB 2000 - Consolidated Comprehensive Emergency Management Plan (CCEMP)."

(3) KSC Program Wide Generic Work Plans (Volume I – VII)
http://tdsearch.ksc.nasa.gov/tdksc/
(a) KSC-TA-6166, as revised, "Environmental Setting Reference Manual"
(b) KSC-TA-6167, as revised, "Health and Safety Reference Manual"
(c) KSC-TA-6168, as revised, "Decision Process Document for the RCRA Corrective Action Program, John F. Kennedy Space Center, Florida"
(d) KSC-TA-6169, as revised, "Sampling and Analysis Plan"
(4) KSC-PLN-1906, as revised, "KSC Energy Management Five-Year Plan"
(5) KSC-PLN-1911, as revised, "Environmental Resource Document"
(6) KSC-PLN-1912, as revised, "NASA-KSC Environmental Management System Manual"
(7) KSC-PLN-1913, as revised, "KSC Water Management Plan"
(8) KSC-PLN-1919, as revised, "KSC Spill Prevention, Control, and Countermeasures Plan"

1.6 Kennedy Customer Agreements

a. KCA-1285, as revised Environmental Management/Pollution Control
b. KCA-1301, as revised Investigation of Environmental Contamination at CCAS and KSC
c. KCA-1369, as revised Interagency Agreement between NASA and Florida Dept. of Environmental Protection for Oversight and Support
d. KCA-1619, as revised Moa Between NASA Headquarters And KSC For Recycling And Affirmative Procurement Lead Center
e. KCA-1649, as revised Interagency Agreement Between the NASA KSC and U.S. Department of the Interior, Fish & Wildlife Service for Use and Management of Property at NASA, KSC Known as the Merritt Island National Wildlife Refuge

1.7 Kennedy Documented Procedures (KDP's)

a. KDP-KSC-P-2570, as revised Environmental Investigation And Remediation Potentially Responsible Party (PRP) Identification And Analysis
b. KDP-KSC-P-1728, as revised KSC POLLUTION INCIDENT REPORTING (PIR) SYSTEM
c. KDP-P-1352, as revised, Environmental Permit Applications and Reports Review and Submittal
d. KDP-P-1714, as revised, Annual Title V Fee Calculation
e. KDP-P-1715, as revised, Title V Annual Operating Report (AOR)
f. KDP-P-1726, as revised, Environmental Assessment (EA)
g. KDP-P-1727, as revised, Environmental Checklist (EC)
h. KDP-P-1730, as revised, Excavation Permit Application and Sitting Approval Environmental Review
i. KDP-P-1733, as revised, Historic and Archaeological Site
j. KDP-P-1741, as revised, Threatened and Endangered Species
k. KDP-P-1747, as revised, Internal Environmental Monitoring and Compliance Inspections
l. KDP-P-1748, as revised, Regulatory Inspections

1.8 KSC Forms

http://kscforms.ksc.nasa.gov/

1.9 Other Documents

a. EPA FDEPHSWA Permit FL6 800 014 585
b. Florida Soil Cleanup Standards
c. Florida Groundwater Guidance, Bureau of Groundwater Protection
d. KSC Generic Work Plans
e. EPA Standard Operating Procedure and Quality Assurance Manual
f. KSC Investigative Derived Waste Management Plan
g. FDEP Standard Operating Procedures-62-160. F.A.C.

CHAPTER 2. DEFINITIONS

2.1 Best Management Practices (BMP)

A set of procedures, coordinated through the Environmental Working Group or Organizational Representatives and, when necessary, with regulatory agencies, establishing detailed performance or design practices which are considered the best standard method for meeting broad or general environmental regulatory requirements.

2.2 Code of Environmental Management Principles (CEMP)

An Environmental Protection Agency (EPA) document comprised of five principles:
a. Management commitment
b. Compliance assurance and pollution prevention
c. Enabling systems
d. Performance and accountability
e. Measurement and improvement

2.3 Environmental Management System (EMS)

A system that incorporates people, procedures, resources, responsibilities, and work practices in a formal structure to address the development, implementation, achievement, and review of the environmental policy.

2.4 Environmental Objective

An overall environmental goal, arising from the environmental policy, that NASA sets for itself to achieve and which is quantified where practicable.

2.5 Environmental Policy Letter (EPL)

A document from the Environmental Program Branch (EPB), coordinated through the Environmental Working Group (EWG), Energy Working Group, Pollution Prevention Working Group or OR's, and when necessary, with regulatory agencies, which provides specific guidance to KSC organizations for approaches to satisfying requirements of environmental including energy regulations within KSC policies.

2.6 Environmental Working Group (EWG)

A group comprised of OR's and other interested parties who meet on a regular basis to review environmental issues and address solutions to these issues and problems.

2.7 Waste Management Working Group (WMWG)

A group that provides all of Kennedy Space Center (KSC) organizational elements with waste management guidance consistent with federal, state, and local

regulations and applicable NASA directives.

2.8 KSC Energy Working Group (KSC EWG)

A team comprised of Environmental Organizational Representatives (EOR's), who ensure KSC makes continual progress toward compliance with federal energy efficiency mandates and utility cost reduction.

2.9 KSC Environmental Program Branch (EPB)

This is the Office, appointed by the Director of Center Operations, to fulfill the Directorate's environmental management responsibilities under KNPD 8500.1, as revised.

2.10 Lead Organization (Maintenance)

This is the primary organization responsible for maintenance of a facility or system.

2.11 Lead Organization (Construction)

Lead is the primary organization responsible for design and/or construction of a facility or system.

2.12 Lead Organization (Operations)

Lead is the primary organization responsible for operations of a facility or system.

2.13 Legal and Other Requirements

Environmental Objectives – are those requirements that the organization is regulated to or has committed to meeting. These include federal, state and local laws, regulations or policies; Office of Management and Budget (OMB) circulars; Executive orders; and international obligations (legal). They also include internal standards, Agency agreements, Presidential initiatives, industry codes or practice, contractual obligations, and non-regulatory guidelines (other).

2.14 National Environmental Policy Act (NEPA)

NEPA is an environmental objective - Within Federal Government agencies such as NASA, compliance with NEPA requires that if "major actions" might impose "significant environmental impacts," then measures for mitigating these adverse impacts shall be identified and evaluated. To avoid confusion, the NASA EMS shall use the term "priority" instead of "significant" when describing environmental impacts.

2.15 Organizational Representative (OR)

One or more individuals; civil service, KSC contractor or subcontractor, or other permanent or temporary KSC tenant, who has been designated as points-of-contact for an organization for matters of environmental compliance and/or activities.

2.16 Pollution Control and Sanitation Officer (PCSO)

The Officer appointed by the Director of Center Operations, responsible for fulfilling the responsibilities described in KNPR 1870.1, as revised.

2.17 Pollution Prevention Working Group (P2WG)

A group comprised of OR's and other interested parties who meet on a regular basis to review Pollution Prevention, Recycling and Affirmative Procurement issues and address solutions to these issues and problems.

2.18 Primary Organization

The Primary Organization is the NASA Directorate or NASA Office reporting directly to the Center Director.

CHAPTER 3. GENERAL ENVIRONMENTAL RESPONSIBILITIES

3.1 NASA Kennedy Space Center Environmental Policy Statement

Environmental Leadership is fundamental to the NASA mission and vision: to improve life here, to extend life to there, and to find life beyond.

Environmental Leadership is one of the four guiding principles of KSC which is uniquely located within the Merritt Island National Wildlife Refuge. The executive managers and all employees at KSC are committed to protect, preserve, enhance, and restore the quality of the environment while achieving our mission activities. It is the responsibility of every KSC employee to ensure that their work activities are conducted in a manner that supports Environmental Leadership at KSC. We shall do this by following the actions set forth in the Environmental Policy below.

a. Assure Compliance - Assure compliance through a proactive, systematic approach that integrates environmental management system elements into KSC operations and practices to comply with all environmental laws, regulations, policies, Executive Orders, and with NASA's environmental directives, procedures, and requirements.
b. Conserve Resources - Conduct KSC operations in a manner that protects and enhances KSC's unique environmental resources through the efficient use of natural resources and energy.
c. Prevent Pollution - Reduce the use and emission of toxic materials, minimize waste generation, and improve KSC recycling efforts through recovery, reuse, and purchase of environmentally preferable products.
d. Restore Environmentally Contaminated Areas - Clean up, enhance, and restore the environmental quality of KSC areas which have been adversely impacted by KSC operations.
e. Continually Improve Environmental Performance - Continually review and improve the KSC environmental management system and environmental performance by such means as developing and sharing innovative technologies and by enhancing environmental science through partnerships with other governmental agencies, academia, and other organizations.

3.2 Center Boards and Committees

The Environmental Program Branch (EPB) represents the Center's environmental interest on the following boards and committees:

a. NASA Environmental Management Board
b. NASA Energy Efficiency Board
c. Environmental Working Group (EWG)
d. Pollution Prevention Working Group (P2WG)
e. Energy Working Group

Each civil servant and contractor operational and tenant organizations shall designate one or more OR's for their activities. Each organization should also designate an Environmental Working Group (EWG), Energy Working Group, and Pollution Prevention Working Group member(s).

3.3 Principal Center

The NASA EPB provides leadership and expertise in recycling and affirmative procurement throughout NASA's centers as the NASA Principal Center for Recycling and Affirmative Procurement. This program shall be carried out through compliance with EO 13101, the NASA Implementation Plan and NPG 8830.1.

3.4 Developing an Environmental Management System

The NASA EPB shall follow KSC ISO 9000 documentation requirements, whenever applicable, and shall attempt to make documents available electronically through the NASA TechDoc System or on the EPB Home Page.

3.5 Preparing Documentation

The initiating organization shall be responsible for preparing all documentation mandated by applicable environmental requirements for the organization's actions or operations. This includes signing and sealing of permit applications, design drawings, and other correspondence by a Professional Engineer (P.E.), if required.

The NASA EPB is available for consultation to assist the initiating organization in compiling any necessary documentation. The NASA EPB can provide background history, opinions, recommendations, or ideas to support the efforts of the initiating organization in preparing the required documents. The NASA EPB is responsible for reviewing all documentation prior to its submittal for regulatory review.

Organizations responsible for maintaining onsite documentation (as established by regulation or permit condition) shall ensure the proper documentation is readily available for internal or regulatory inspections.

The NASA EPB is responsible for providing copies of all permits and other applicable documentation from sources external to KSC to the appropriate KSC organizations. The NASA EPB shall maintain a centralized official file for this documentation.

3.6 External Communications

The NASA EPB is the Center's single interface for official communications with environmental regulatory agencies and other organizations external to KSC regarding environmental issues. Some examples of official communications include negotiating permit conditions, enforcement orders, compliance agreements, and discussions that impact KSC programs and operations or have multi-directorate implications.

Establishing the NASA EPB as a single interface is intended to ensure consistency of application of environmental program requirements across the Center, to present a consistent position to parties external to the Center, and to meet Office of Federal Procurement Policy and NASA Headquarters' mandates regarding inherently governmental functions. Activities that require the exercise of discretion in applying Governmental authority, or the making of commitments that bind the United States to take some action, either by contract, policy, regulation, authorization, order, monetary

payment or otherwise, are considered inherently Governmental and should be reserved to the performance of Government employees.

The gathering of information by a contractor to provide advice, opinions, recommendations, or ideas to Governmental officials is encouraged, as is contractor participation in Agency meetings or discussions with regulatory officials.

3.7 Interpreting Regulation and Establishing Policy

The NASA EPB shall be solely responsible for providing policy and guidance on environmental issues at KSC. The NASA EPB shall evaluate and maintain current knowledge in all environmental requirements and shall make appropriate KSC procedures and controls available to all Center organizations to help assure compliance.

When environmental requirements necessitate interpretation, the NASA EPB shall coordinate and document policy for KSC organizations. Any KSC organization may request clarification of KSC environmental policy or provide draft "Best Management Practices" for their operations to the NASA EPB. The NASA EPB shall provide a response based on in-house expertise or previously negotiated agreements with regulatory agencies.

When required, the NASA EPB shall request clarification from and negotiate new agreements with the appropriate regulating agencies. The NASA EPB may elicit input and participation from KSC organizations when preparing the Center's position on a subject or when meeting with regulatory personnel. The NASA EPB shall provide the new agreements or clarifications to Center organizations as they are finalized.

3.8 Implementing Policy and Regulations

All KSC organizations (NASA and contractor) are responsible for ensuring all actions taken under their authority and funding meet the applicable requirements of all federal, state and local environmental laws and regulations including obtaining all required environmental permits. Each organization must ensure that controls on employee and contractor and subcontractor activities are established and maintained to prevent noncompliance.

3.9 Inspection, Monitoring, Testing, and Reporting

Testing, inspection, monitoring, and reporting required to comply with environmental regulations are the responsibility of each KSC organization. Each KSC organization is responsible for ensuring the appropriate requirements of the regulations are fulfilled for operations and activities under their control.

a. Inspections - Routine inspections of facilities or operations are performed by the facility manager or qualified operational personnel. Requirements for routine inspections and recordkeeping are specified in regulations and permits. Examples of required routine inspections include weekly inspection of secondary containment for storage tanks and weekly inspections of hazardous waste storage facilities. Facility operators shall know which inspections are required, shall perform the inspections, shall keep applicable records, and shall

make them available for the inspection. Guidance on the inspection requirements is available from the NASA Environmental Program Branch EPB.

b. The NASA EPB shall perform periodic inspections of KSC programs. The purpose of internal inspections is to ensure activities are in compliance with their respective permits or with the regulations governing their operations. These inspections shall not assess punitive damages such as those assessed by the regulatory agencies; their purpose is to identify compliance concerns so they can be corrected in a timely manner by the responsible operating organization.

   Environmental regulatory agencies that are authorized to inspect may do so at any reasonable time for any permitted or regulated facility or activity at KSC. The regulatory agency may give verbal or written notice of an impending inspection or the inspection may be unannounced. The NASA EPB shall be the point-of-contact and shall accompany the regulator at all times while on KSC property. The KSC organization responsible for the facility or activity being inspected should also attend the inspection. To assure compliance with the permit, regulators can also perform sampling or monitoring on any substance or parameter at any KSC facility. Inspection findings are provided to operational personnel and the management of the organization.

c. Monitoring - Environmental monitoring of operational areas at KSC is performed to determine if permitted activities are operating in accordance with the General and specific conditions listed in a permit.

   Permit-related sampling and analysis is performed by the NASA EPB Environmental Sampling Contractor, operational personnel, or designated representatives. Monitoring results are transferred to appropriate forms and transmitted to the operating organization. The operating organization is responsible for reviewing the data provided by the Environmental Sampling Contractor or operational personnel to ensure no transcription errors have occurred. The operating organization is also responsible for listing items of noncompliance and explaining the reason for noncompliance in a malfunction report.

   The operating organization is responsible for transmitting the monitoring reports to the NASA EPB. In most instances, the Chief of the NASA EPB shall sign the monitoring reports as the owner, operator, or authorized representative. An exception to this are reports that require the signature of a licensed operator as in the case of the Monthly Operating Reports for drinking water treatment.

d. Testing - Any operational testing required by permit or regulation shall be performed by the Operator or installer, as applicable. Examples of testing are tightness tests for storage tank installations to certify the integrity of a tank before it is placed in service and leak tests on containment to determine the integrity of the containment system. Any reports of testing results should be maintained on-site and a copy forwarded to the NASA EPB through the operating organization for submittal to the proper agency, if required.

e. Reporting - All required regulatory reports shall be submitted to regulatory agencies through the NASA EPB. The operating organization must make certain the required reports are submitted to the NASA EPB in sufficient time to ensure the reports reach the regulatory agency in the time period listed in the applicable permit or regulation.

   The NASA EPB shall review the submittal for completeness and accuracy. The operating organization shall be notified of any deficiencies and is responsible for correcting deficiencies. When complete, the NASA EPB shall submit the report to the appropriate regulatory agency. Copies of the correspondence transmitted to the regulatory agency are kept by the NASA EPB.

   The NASA EPB shall be the listed point-of-contact for all monitoring report submittals and shall coordinate inquiries from regulatory agencies concerning monitoring and testing data.

3.10 Training

KSC organizations shall ensure personnel receive proper training prior to engaging in activities that could potentially have environmental impacts. Mandatory training is specifically set forth in State and Federal regulations for certain activities and operations. It is the responsibility of each organization to provide training and maintain records for compliance purposes.

3.11 Public Involvement

Public involvement through public notice, comments, and/or inputs shall be required at times to support environmental actions at KSC. Actions include certain permit applications/modifications, Environmental Assessments (EA), and Environmental Impact Statements (EIS).

Public involvement also occurs through workshops, public meetings, public hearings, and administrative hearings. The workshop is the most informal and is a meeting to inform the public of the status of a specific topic and to answer any questions the public might have. The public meeting is also an informally structured meeting to discuss a specific topic and to get the public's input. This type of meeting is a requirement for RCRA permit modifications and may be attended by the regulatory agency involved. A public hearing is a formally structured meeting run by the interested Governmental Agency and is part of the public record. An administrative hearing is a legal proceeding run by a Hearing Officer. It is conducted after Intent to Issue Permit has been challenged and is attended by lawyers for the challenging and the defending parties.

While the ultimate responsibility for these meetings shall reside with the NASA EPB, it shall be the task of the organization to support the technical aspects of the meetings and coordinate the details with the NASA EPB, such as date, time, place, and meeting set-up.

While the NASA EPB shall be responsible for the final content and release of information to outside agencies, the general public, and the media (through the External Affairs Office), the organization shall be required to provide technical input to meeting notices, press releases, and fact sheets.

3.12 Violations

Each KSC organization is responsible for ensuring procedures have been developed to ensure compliance with permit requirements within their organization. Each KSC organization is responsible for reporting apparent permit violations to the NASA EPB. The NASA EPB is responsible for reporting apparent permit violations to the appropriate state or federal agencies and negotiating compliance requirements in cooperation with the lead organization.

CHAPTER 4. ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL ANALYSIS

4.1 Regulatory Relationships

The National Environmental Policy Act (NEPA) of 1969 levied the requirement for all federal agencies review their actions for environmental effects and when the action could or would produce a significant effect, the proposal be publicly reviewed. The Act also establishes the Council on Environmental Quality (CEQ) to administer the program and advise the President and Congress on environmental issues. As the law relates only to federal agencies and their actions, no state regulations apply and no state agencies have authority to administer the program. However, public review is required, therefore, the appropriate state and local agencies must be consulted and their comments on proposed projects solicited.

4.2 Documentation

a. Use of Environmental Checklist for KSC Project Site Requests
When a facility or project involving the construction or modification of a facility structure or operation is proposed, site approval must be obtained through the Center Operations Directorate. As these activities often involve impacts to the environment, a KSC Environmental Checklist (KSC 21-608 NS) must be prepared for each project (KDP-P-1727). The checklist should be completed by the project initiator, signed by the requestor, and submitted to EPB with all supporting documentation (maps, project scope, project description,….) prior to the submittal of a sitting request, unless the requestor determines the project has no environmental impacts - all “NO’s” were checked on the checklist form. In which case, the checklist must be signed by the requestor and filed in the official project file. For those checklist submitted to the EPB, the EPB shall respond with a Record of Environmental Consideration (REC). The completed REC or a copy of the signed checklist with all “NO’s” marked, whichever is appropriate for the chosen alternative, should be attached to the sitting request. Refer to KDP-P-1730, as revised for the process of the evaluation of excavation permits in EPB. No sitting request shall be approved without a completed approved checklist attached.

b. Use of AF Form 813 for CCAFS Projects
When a new facility or project involving the construction or modification of a facility structure or operation on CCAFS is proposed, an AF Form 813, “Request for Environmental Impact Analysis,” is required by the Air Force. Form 813 shall be completed using identical information utilized during the submittal of the KSC Environmental Checklist. The project proponent shall forward the signed AF 813 to CCAFS (45 CES/CEVP) and contact the affected OR if more information is needed and when the response is received from the Air Force (AF).

c. NEPA Documentation
(1) Environmental Analysis
a. The NEPA of 1969 requires federal agencies to prepare an Environmental Analysis of any action undertaken that could result in a significant impact on the environment. The initial process of environmental review of projects and actions under this requirement is depicted in KDP-P-1727. The KSC Environmental Checklist is a

document prepared to aid in this early identification of environmental issues and requirements associated with proposed work and activities. The project lead or requester for a project or action is responsible for completing the KSC Environmental Checklist at the earliest possible time and either filing it or submitting it to the EPB. A copy of the form and detailed instructions for its completion are available on the KSC EPB Home Page.

b. Once all the pertinent information is received, the Lead or Requester OR signs the appropriate space on the form; if all "NO's" were completed in Section 2b, the OR marks the appropriate box and files the checklist. If further evaluation is needed, the Lead forwards the document to the EPB. EPB shall then prepare a REC for the project and return it to the OR.

c. If the project is categorically excluded from further evaluation, because of a lack of impacts, the EPB shall mark the appropriate space on the REC.

d. The REC shall also list all potential environmental requirements for the project including permits, outside consultations, and special procedures or processes that must be used during project implementation.

e. If the EPB determines that a formal environmental assessment (EA) shall be required, EPB shall prepare the EA. The EPB may request funding from the appropriate program/project office. If an Environmental Impact Statement (EIS) is required, the Primary Organization's OR shall be requested to contact the appropriate NASA Headquarters' official to obtain funding for the preparation of the EIS. Preparation of the EIS shall be coordinated between the EPB and NASA Headquarters with support of the primary organization with programmatic responsibility. Refer to KDP-P-1726, as revised for the process of Environmental Assessments.

f. Environmental Resources Document
The EPB shall prepare and update the KSC Environmental Resources Document (ERD) required by 14 CFR 1216.3. The ERD shall be used by preparers of EA's and EIS's to avoid restating similar material. The ERD shall cover areas prescribed in 14 CFR 1216.3 and shall be updated yearly with page changes, if needed, and shall be revised every five years. The ERD can be found on the KSC EPB home page http://environmental.ksc.nasa.gov/Nepa/nepa.htm .

CHAPTER 5. POLLUTION INCIDENT REPORTING AND NOTIFICATION

5.1 Pollution Incident Release Reporting Requirements:

Hazardous materials in amounts varying from several ounces of relatively benign substances to thousands of gallons of toxic, flammable and/or explosive materials are received and handled throughout KSC each day. All releases must be reported to the EPB as "pollution incidents," because the environmental impact that may result is regulated by federal or Florida Codes or because the circumstances of the release, such as the location or nature of the release, may result in violations of Code.

At KSC and NASA-KSC operated facilities located at Cape Canaveral Air Force Station (CCAFS), releases must be reported verbally to the EPB at 867-4280 or 867-4556 within the work shift discovered. In cases where the EPB cannot be reached, such as second or third shift or on the weekend, the Joint Base Operation Support Contractor (JBOSC) Support Operations Office shall be notified at 853-5211. The Operations Officer shall notify the appropriate personnel.

The EPB shall be responsible for determining if the release is a reportable quantity of a reportable substance. The EPB shall be the KSC point-of-contact for all notification and correspondence about any release to off-site authorities. Substances which require EPB to contact off-site authorities include:

Petroleum products:
- Brevard County, verbal, followed by written appropriate FDEP form. Maps are desirable.
- National Response Center, verbal, if discharged to surface waters.

Extremely hazardous substances:
- State Emergency Response Commission, verbal.

CERCLA hazardous substances:
- National Response Center, verbal.
- State Emergency Response Commission, verbal.

Industrial Wastewater Emergency Overflow:
- FDEP, verbal, written as requested.

Sewage releases:
- FDEP, verbal, written with next monthly report.

Air releases of emissions exceeding permitted limits:
- FDEP, verbal, followed by written report at FDEP's discretion.

PCB's:
- National Response Center, verbal.

All releases at KSC shall be reported using the KSC Incident Reporting and Notification Form (PIR), KSC Form 21-555 (as revised). Within three working days of the incident, the responsible party must submit a KSC PIR (KSC Form 21-555 (as revised)) as completely as possible based on the best available knowledge of the incident. The Pollution Incident Report shall be kept by the EPB. The EPB shall provide to the OR a completed PIR Form indicating whether there is any additional information required or follow-on actions. The completed PIR will be the OR's copy for record and indicated the PIR has been reviewed by the EPB.

5.2 Pollution Incident Release Reporting Requirements Exemptions:

The following are general exemptions from the written reporting and notification form requirement:

(1) Quantity of hazardous material released is 4 ounces or less and is not reportable to off-site regulatory agencies.

(2) Release occurs inside a facility and does not reach the outside environment and is not reportable to off-site regulatory agencies

(3) Release is considered a fugitive emission or is contained as a standard operational procedure or scheduled activity (e.g., drips from disconnection of fluid lines) and does not exceed the reportable quantity (RQ) threshold.

(4) Release occurs on impervious surface and is cleaned up without aid from JBOSC spill response and with no impact to soil or water. (Exception is a release from a storage tank system to its secondary containment, which must be reported.)

5.3 Pollution Incident Release Database:

A database of PIR's is maintained by EPB and is used to store information on reported releases. Compiling information in this manner allows for the evaluation of incidents for trends and to rapidly answer questions concerning spills reported at the Center. Refer to KDP-KSC-P-1728, as revised for PIR process requirements. PIR data is also used to support other environmental programs at KSC such as:

Compliance and Enforcement Support
Permit Nonconformance
Environmental Planning
Statistical and Trend Analysis
~~A~~cademic Research
Property Transfer/Site Audits

CHAPTER 6. SPILL PREVENTION, CONTROL AND COUNTERMEASURES PLAN

6.1 About the Program

KSC's Spill Prevention, Control, and Countermeasure Plan (SPCC Plan), KSC-PLN-1919, documents the procedures for the prevention, response, control, and reporting of spills of oil for all personnel at KSC. This plan serves as a guide for personnel and organizations that are responsible for ensuring that all measures are taken to prevent and contain spills and leaks of oil in accordance with all applicable state and federal regulations. This plan contains the following information:

(1) A general description of the installation as it pertains to spill prevention, control, and response;
(2) An inventory of the storage, handling, and transfer facilities that could potentially produce a significant spill of oil;
(3) Roles and responsibilities for spill detection and prevention for all organizations that use or store oil;
(4) Roles and responsibilities for personnel and organizations involved in coordinating and participating in the response to spills of oil;
(5) Spill prevention, control, and countermeasure (SPCC) training requirements for oil handling personnel; and
(6) Reporting procedures and recordkeeping requirements for spills.

In conjunction with the facility-wide SPCC Plan, site-specific SPCC Plans were developed for each individual building or area at KSC where oil is stored or used in containers or processing equipment equal to or greater than 55 gallons (gals). The site-specific plans are located in Appendices B-1 through B-8 of the SPCC Plan and contain the following information:

(1) An inventory of oil that is located at storage, handling, and transfer facilities;
(2) A detailed description of countermeasures and equipment available for diversion and containment of spills for each facility listed in the inventory; and
(3) Site-specific requirements for spill prevention, response, and control.

A full copy of the SPCC Plan is maintained at the NASA EPB and is available to the Environmental Protection Agency (US EPA) Regional Administrator for on-site review during normal working hours.

Professional Engineer recommendations describing site-specific and facility-wide action items required to validate the SPCC Plan and to meet the EPA SPCC compliance standards as specified in Title 40 Code of Federal Regulations (CFR) 112 are contained in the *KSC SPCC Implementation Plan*. This separate document is maintained in the NASA EPB Office. Completion of all the items within the KSC SPCC Implementation Plan is essential to achieve compliance with 40 CFR 112 requirements.

6.2 Background and Regulatory Requirements

Oil pollution prevention regulations in 40 CFR 112 require the preparation and implementation of SPCC Plans for all non-transportation related facilities that store oil in excess of specific quantities [an aggregate aboveground container capacity greater than

1,320 gals (only containers greater than or equal to 55 gals are counted), or completely buried storage capacity greater than 42,000 gals] and that have discharged or could reasonably be expected to discharge oil into navigable waters of the U.S. or its adjoining shorelines. Because KSC stores more than 1,320 gals of oil above ground and a spill could reach navigable U. S. water, the facility is subject to the SPCC regulations.

The SPCC plan requirements pertaining to spill events and spill prediction [40 CFR 112.7(a) and 112.7(b)] are addressed in Section 5.0 and Appendices B-1 through B-9. The SPCC plan requirements pertaining to appropriate spill prevention and containment and procedures [40 CFR 112.7(c)] are addressed in Sections 4.0 and Appendices B-1 through B-9.

In accordance with the SPCC regulations, this SPCC Plan shall be reviewed and evaluated every 5 years. In addition, the SPCC Plan shall be amended if there has been a change in facility design that affects possible oil discharge.

6.3 Objective and Scope

The KSC SPCC Plan outlines the criteria established by KSC to prevent, respond to, control, and report spills of oil. Various types and quantities of oil are stored, transported, and handled throughout the installation to support the operations of KSC. The primary objective of this SPCC Plan is to serve as a guide for installation personnel that are responsible for the prevention, response, control, and reporting of all spills of oil.

The KSC SPCC Plan describes both the facility-wide and site-specific approach for preventing and addressing spills. This document serves as the primary guidance for assigning responsibility for the prevention and proper response to spills of oil and supercedes all SPCC Plan versions previously developed for KSC.

6.4 Plan Organization

The KSC SPCC Plan has been organized to address both the facility-wide and site-specific strategy for the prevention, response, control, and reporting of spills at KSC, and includes the following elements:

a. Section 1.0 provides an overview of the SPCC Plan;
b. Section 2.0 provides general information on the facility including its mission, location, and configuration of installation facilities and infrastructure, critical water resources, land uses, and possible spill migration pathways;
c. Section 3.0 describes the roles and responsibilities of key organizations involved with implementing this SPCC Plan and executing spill prevention, response, control, and reporting activities;
d. Section 4.0 contains spill prevention procedures and spill response planning requirements;
e. Section 5.0 contains spill response, control, and cleanup procedures;
f. Section 6.0 describes reporting requirements for releases;
g. Section 7.0 contains a summary;
h. Appendix A contains an SPCC Plan Amendment Log;
i. Appendices B-1 through B-9 provide site-specific information for each oil storage, handling, and transfer facility capable of producing a significant spill;

j. Appendix C contains a KSC pollution incident reporting form; and
k. Appendix D contains the Florida Department of Environmental Protection (FDEP) Incident Notification Instructions and Form.

CHAPTER 7. AIR POLLUTION

7.1 Regulatory Requirements

a. The Clean Air Act (CAA) requires federal facilities to, “comply with all federal, state, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution in the same manner, and to the same extent as any non-Governmental entity.” The Act further states that, “This subsection shall apply notwithstanding any immunity of such agencies, officers, agents, or employees under any law or rule of law.”
b. The EPA has delegated part of its air pollution permitting authority under the Clean Air Act to the Florida Department of Environmental Protection (FDEP).
c. This delegation allows the FDEP to issue Title V operation permits, Prevention of Significant Deterioration (PSD) permits and Non-attainment Area Applicability (AA) permits for the EPA. The last two permit programs apply to major sources within attainment areas and non-attainment areas, respectively. Brevard County is currently considered an attainment area for all the National Ambient Air Quality Standard (NAAQS) pollutants.
d. The Clean Air Act, Section 112(r), places a general duty on the owners and operators of stationary sources producing, processing, handling, or storing any extremely hazardous substance, or any substance listed pursuant to Section 112(r) to:
   (1) Identify hazards that may result from accidental releases;
   (2) Design and maintain a safe facility; and
   (3) Minimize the consequences of releases.

   All processes that include hazardous chemicals, regardless of the quantity or applicability to the Risk Management Plan (RMP) List Rule, are subject to the general duty clause of the RMP rule. The EPA delegated authority to the State of Florida Department of Community Affairs to administer the RMP regulations.

7.2 Documentation

Refer to Section 5 of this KNPR for more information on required documentation for all pollution releases including air pollution.

7.3 Permits

a. Air pollution permits establish specific requirements for emission units. To ensure permits are obtained or modified as required by regulation, the lead organization, through the OR, must notify the EPB of the existence, construction, or modification of air pollution emission points.
b. The OR must ensure procedures are in place to have the permit, or the basis for a permit exemption, kept in the vicinity of each emission point or filed in one designated central location.
c. The OR must ensure procedures are developed which ensure permit compliance for each emission unit within their organization.
d. Permit Applications
   (1) Existing Permitted Emission Units:

(a) To make major modifications to an existing emission unit, an application must be submitted to the EPB by the OR signed and sealed by a registered Professional Engineer (PE). The construction and/or Title V operation permit application must be reviewed for accuracy and completeness by the EPB and if any corrections are necessary, will be returned to the OR and PE. Once finalized, the EPB will submit the signed and sealed application to the FDEP. The FDEP will then review the permit application for completeness and may submit a request for additional information (RAI). If the FDEP issues an RAI, the OR, PE, and EPB will be responsible for addressing the issues in the RAI and the EPB will submit to the FDEP a combined response to the RAI. The OR, PE, and EPB will also be responsible for reviewing all subsequent draft and proposed permits issued by the FDEP, which will be disseminated by the EPB to all interested parties. The OR, PE, and EPB will be responsible for addressing any issues or concerns and the EPB will submit to the FDEP a combined response to the draft and/or proposed permits. Once the permit is finalized, the FDEP will issue the final construction and/or Title V operation permit to the EPB and the EPB will be responsible for distribution of the final permit to all interested parties

(b) Renewing the FDEP Title V Air Operation Permit shall be the responsibility of the EPB, which shall compile information from each emission unit operator.

(2) Future Emission Units:

(a) Prior to constructing or initiating operation of a major air pollution emission unit, a construction permit must be obtained from the FDEP. To obtain a permit to construct or initiate operation of an emission unit, a combined construction and Title V operation permit application must be submitted to the EPB by the OR signed and sealed in accordance with the procedures listed in section 7.3.d(1)(a).

(b) The emission units with only construction permits shall be incorporated into the Title V Operation Permit. The incorporation shall be accomplished by modifying the overall Title V permit to incorporate the new or modified unit by following the procedures listed in 7.3.d(1)(a). The modification shall be requested from FDEP at the time that construction is complete.

e. Recordkeeping:
To show each emission unit's compliance with applicable regulatory and permit requirements, the OR shall ensure records are kept and available to support inspections and annual reporting requirements. The EPB shall keep records, as necessary, to determine the status of KSC as a major or minor source as defined within EPA and FDEP regulations, to manage the joint Title V permit conditions, and to facilitate the general knowledge of KSC emission units. In addition to the files that shall be kept, EPB shall maintain an air pollution records. The OR is responsible for coordinating the submittal to the EPB of the data necessary to keep the records current for each emission unit.

f. Controls:

(1) The OR and the EPB must work together to eliminate or minimize air pollution emissions.

(2) Permit Requirements. The type of control technology required for a particular emission point is specified in the permit issued by the FDEP.

(3) Prevention of Accidental Releases of Hazardous Air Pollutants

(a) Accidental releases of hazardous air pollutants are regulated under the Clean Air Act (CAA), 42 U.S.C. Section 7412r.

(b) The CAA general duty clause establishes a duty, as stated in 42 U.S.C. Section 7412r(1), "to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases and to minimize the consequences of accidental releases which do occur."

(c) The lead organization (operations), with assistance from the EPB and Safety, is responsible for ensuring compliance with the general duty clause of the CAA and the regulations associated with the prevention of accidental releases.

(4) Prevention of the Release of Ozone Depleting Substances

(a) Class I and Class II Substance Provisions of the Clean Air Act Amendments of 1990.

1. Section 7671(g) requires the EPA promulgate "requirements that Class I or Class II substances contained in bulk in appliances, machines or other goods shall be removed from each such appliance, machine or other good prior to the disposal of such items or their delivery for recycling" before November 1994. "Effective July 1, 1992, it shall be unlawful for any person, in the course of maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration to knowingly vent or otherwise knowingly release or dispose of any Class I or Class II substance used as a refrigerant in such appliance (or industrial process refrigeration) in a manner which permits such substance to enter the environment. De minimis releases associated with good faith attempts to recapture and recycle or safely dispose of any such substance shall not be subject to the prohibition set forth in the preceding sentence." [42 U.S.C. Section 7671(g)]
2. The OR is responsible for ensuring the CAA requirements, and any related regulations, as they pertain to the Ozone Depleting Substances are complied with.

(b) Servicing of Motor Vehicle Air Conditioners:

The servicing of motor vehicle air conditioners is currently regulated under FAC 62-281. The primary organization responsible for the servicing of motor vehicle air conditioners must ensure that all applicable motor vehicle air conditioner regulations are complied with and those responsible personnel are properly trained. Certification of training must be maintained and kept on file in the Motor Vehicle Air Conditioner (MVAC) servicing shops.

7.4 Inspection, Monitoring, Testing and Reporting

a. Refer to Chapter 5 of this KNPR for more information on required documentation for all pollution releases.

b. Inspections:
   (1) The EPA or the FDEP may inspect KSC for compliance with regulatory and permit requirements at any time. FDEP inspects KSC for compliance at least once a year.
   (2) All inspections shall be coordinated and scheduled through the EPB with assistance from the affected OR.
   (3) Internal RMP inspections are required by 40 CFR 68.58. Again, the EPB, and the OR, or a representative shall be present at all times. The EPB shall be responsible for implementing an internal RMP inspection program for KSC. Schedules for internal inspections depend upon staffing constraints and must be completed at least every 3-years. The purpose of internal inspections is to ensure activities are in compliance with the RMP regulations found in 40 CFR Part 68. To ensure the completeness of the inspections, checklists shall be used and be completed by the OR, or a representative during or prior to the inspections. These inspections shall not assess punitive damages such as those assessed by the regulatory agencies; their purpose is to identify compliance concerns so they can be corrected.

c. Monitoring and Testing:
   FDEP Title V Air Operation Permit requires Visual Emission Observations (VEO) monitoring reports to be performed and submitted to FDEP for some emission units. The frequency of the monitoring is specified in the permit. The performance of compliance monitoring, as specified within the permit, shall be the responsibility of the EPB. The OR must concurrently coordinate with EPB to ensure the monitoring is done in time to meet the permit deadline taking into account the time needed for review. The FDEP must be notified 15 days prior to monitoring, therefore, the OR must contact the EPB and request the EPB notify the FDEP of the scheduled monitoring. Once the VEO is completed and provided to the OR, the OR shall review the reports for accuracy prior to submitting to the EPB. Upon the OR acceptance of the VEO, the reports shall be submitted to the EPB for transmittal to the FDEP. Future permits may require testing of new or reconstructed emission units. The frequency and methods will be specified in the permit and the responsibility of performance shall be the responsibility of the OR. The EPB is responsible for submitting the final results to the FDEP.

d. Reporting:
   (1) In addition to the requirement to submit monitoring reports, reports are required for the submission of calculations showing emissions based on the amount of material used in a process over a period of time on an annual basis. These reports must be prepared in accordance with the permit requirements and submitted by the OR to the EPB, generally at least once a year. Refer to KDP-P-1714, as revised for the Fee Calculation process and to KDP-P-1715, as revised for the Annual Air Operating Reporting process.
   (2) Annual and individual Asbestos Abatement projects must be reported to the FDEP if the project exceeds the threshold amounts of 260 linear feet, 160 square feet, or 35 cubic feet of removal of regulated asbestos-containing material (RACM). There are also the same reporting requirements for all demolition projects of any load-supporting structural member regardless of the presence of RACM or not and of any threshold amount. Both requirements are reported using the same FDEP form 62-

257.900(1) and must be submitted to the FDEP 10-days prior to the start of work.

(3) The RMP regulations require the submission of an annual registration fee form based on the regulated substance and program level at the facility. The RMP must be revised and submitted to the EPA any time a facility or process is modified or added over the threshold amounts or every 5 years, which ever occurs first. To ensure compliance with the RMP regulations, an annual applicability checklist shall be completed by the OR and submitted to the EPB.

CHAPTER 8. WATER CONSERVATION AND CONSUMPTIVE USE

8.1 Water Conservation

Water conservation is the responsibility of all personnel at KSC. Whether a resident or visitor to Florida, we all have a vested interest in our water resources and should strive to conserve whenever possible. All KSC employees and tenants should carry out their day-to-day functions with good water conservation practices and should report water waste from improperly operating equipment to the appropriate Trouble Call Office.

All NASA program and institution organizations and supporting contractor organizations, should ensure efficient and cost-effective utility use by applying water conservation techniques to the operation and maintenance of KSC systems and ensure that new construction and modifications are compliant with federal and NASA water conservation mandates. All KSC organizations are expected to contribute to deliverables to NASA Headquarters such as budget exhibits, reports, self-assessments, spot check responses, and special data collections as required.

The NASA EPB is tasked with developing the “KSC Water Management Plan” based on the requirements of Executive Order 13123, *Greening the Government Through Efficient Energy Management.* EO 13123 mandates an aggressive policy for reducing potable water consumption at federal facilities and encourages reducing potable water usage by implementing life cycle, cost effective water efficiency programs that include a water management plan, and not less than four Federal Energy Management Program (FEMP) Best Management Practices (BMPs). The KSC Water Management Plan is found in KSC-PLN-1913

8.2 Consumptive Use

The State of Florida has delegated the St. Johns River Water Management District to promulgate regulations and administer programs for the enforcement of the State and Federal laws concerning the use of water resources. The District has developed the Consumptive Use Permit (CUP) program as one of the primary tools to ensure good quality, affordable water for all residents, while protecting the state's water resources.

The CUP program allocates water for beneficial uses such as agriculture, industry, construction, and public supply. The CUP program benefits all residents of the District by requiring water conservation to prevent wasteful uses, requiring reuse of reclaimed water (treated wastewater and stormwater) instead of higher quality groundwater, and setting limits on how much water can be withdrawn at each location in the aquifer. These limits protect existing residents' water supplies and protect aquifers, lakes and rivers from harm. Efforts at conservation, proper utilization, and quality control of water resources are administered through the permitting of consumptive uses of water.

8.3 Kennedy Space Center Consumptive Use Permit 50054

The consumptive use regulations in 40C-2, Florida Administrative Code, require that KSC obtain coverage of our day-to-day operations and activities under an Individual permit due to the types of water usage and the volumes of water used here at the

Center. The Individual permit applies to all organizations at KSC and covers various activities including household use, industrial use, aesthetic use, agricultural and landscaping use, and secondary use of public supply water. The permit is presented as Attachment A of the KSC Water Management Plan.

It is the responsibility of all organizations to comply with the requirements of this permit and notify the NASA EPB of any operational changes which could impact the Center's compliance with the permit. Those organizations with reporting requirements must submit all required data to the NASA EPB on a monthly basis, no later than the 10th day of the month following the reporting period. The NASA EPB shall compile monthly data from all KSC organizations into a single six-month report and shall submit the report prior to the due dates specified in the permit.

8.4 Dewatering Operations

Dewatering activities at KSC are regulated by the quantity of water withdrawn, the duration of the activity, and the method by which the withdrawn water is disposed. Dewatering operations associated with construction activities or operational activities must follow the consumptive use regulations in 40C-2, Florida Administrative Code. These rules apply to all dewatering activities including the pump out of manholes, sumps, and other structures in which groundwater may accumulate.

All dewatering projects at KSC, regardless of permitting requirements, must adhere to the following general requirements:

a. Appropriate regulations and policy for potentially contaminated water must be followed.
b. All dewatering shall adhere to best management practices regarding turbidity and erosion control.
c. No dewatering activities shall be performed where there are chemicals or materials present in the discharge area that may contaminate the effluent.
d. There shall be no direct discharges to Outstanding Florida Waters (OFW), Class I or Class II water bodies.

Dewatering projects shall be considered individual projects when they involve distinctly separate dewatering operations (i.e. different geographic locations, different objectives). For example, dewatering for trenching operations at two different construction locations would be considered two separate dewatering activities. A series of manholes being simultaneously dewatered for a related project would be one distinct dewatering operation.

a. Permitting Requirements
   A dewatering activity may withdraw any quantity of groundwater or surface water for any duration of time without a consumptive use permit, provided the water is recharged on site by infiltration (40C-2.051, FAC).

   An Individual Permit or a Standard General Permit is required for dewatering activities that exceed:
   (1) 6 million gallons per day for the first 120 hours; or
   (2) 2 million gallons per day for 60 days; or

(3) 1 million gallons per day for 180 days;
(4) 180 days duration.

All other dewatering activities are covered under a “Noticed General Permit for Short Term Construction Dewatering” Permit issued by the District under 40C-22.030, FAC. This permit has been issued to the NASA EPB and is provided as Construction Dewatering Permit 84324. Any KSC organization may receive coverage under this permit provided the permit conditions are followed.

At least three weeks prior to beginning dewatering, the initiating organization must submit the data described in Condition 10 of the permit to the NASA EPB. The data submitted shall include District Form RDS-50; a site map with a north arrow; a scale, area to be dewatered; location and type of turbidity barriers to be used; the general route of discharge and all points of discharge offsite to water-bodies and wetlands; and the permit tracking number. If the dewatering shall be 300,000 gallons per day or less and shall not exceed 30 days duration, then the submittal of the data is not required, however, the dewatering activity must comply with all other conditions of the permit.

The NASA EPB shall review the submittal. If incomplete, the submittal shall be returned to the initiating organization for correction. If complete, the NASA Responsible Official shall sign the RDS-50 form as the Applicant and as the Land Owner and the application shall be sent by certified mail to the St. Johns River Water Management District at least 10 days prior to the start of the activity.

8.5 Permitting Process for Individual or General Permits

The initiating organization is responsible for preparing the permit application (Form 40C-2.1082-1, Attachment A) and all supporting documentation and drawings. The initiating organization is responsible for submitting three copies of the completed permit application package to the NASA EPB for review.

The NASA EPB is responsible for reviewing all application submittals. If incomplete, the permit application shall be returned to the initiating organization for correction. If complete, the NASA Responsible Official shall sign the application as the Applicant and as the Land Owner and the application shall be sent by certified mail to the St. Johns River Water Management District.

The District is authorized by regulations to take no more than 30 days to review a permit application for completeness and accuracy. If not satisfied with the permit application, the District shall request additional information to correct any deficiencies or omissions. The response to the District shall be submitted to the NASA EPB for review and then forwarded to the District. This process may continue until the application is deemed complete by the District.

When satisfied with the permit application, the District shall issue and mail the permit to the NASA EPB who shall then forward the permit to the initiating organization. The local District office issues Noticed General and General Permits within 30 days of an application package being approved. Projects that require Individual Permits are authorized by the District’s Governing Board at their monthly meetings within 90 days of an application package being approved.

The initiating organization is responsible for ensuring that the design information submitted to the District in the permit application and any subsequent submittals is equivalent to the design information in the final work package and/or construction contract. The permit and its conditions must also be included in the construction contract.

In no case shall construction or operation begin prior to approval and receipt of a required permit nor should the operation violate the conditions of a permit. The initiating organization is responsible for ensuring that the entity performing the work abides by all permit conditions. Failure to do so shall result in the Permittee being subject to appropriate enforcement action by the District. Any penalties incurred by the Permittee (NASA) by a Contractor's actions or lack thereof shall result in the penalties being deferred to the Contractor.

The initiating organization shall periodically inspect the project site to ensure compliance with all permit conditions. A major compliance issue is the installation/implementation of turbidity and erosion control measures that are acceptable to the regulatory agencies. In the event permit violations occur, it is the initiating organizations responsibility to notify the NASA EPB and correct the problems internally or request support from NASA EPB for assistance if permit interpretation or consultation with a regulatory agency is necessary.

8.6 Monitoring

The EPB shall be responsible for implementing an internal inspection program for KSC. The purpose of internal inspections is to ensure activities are in compliance with their respective permits or with the regulations governing their operations. These inspections shall not assess punitive damages such as those assessed by the regulatory agencies; their purpose is to identify compliance concerns so they can be corrected.

8.7 Reports

All required reports of monitoring results must be submitted to the District through the NASA EPB. The reports must be submitted on a monthly basis, no later than the 10th day of the month following the reporting period. The NASA EPB shall review the submittal. If incomplete, the submittal shall be returned to the initiating organization for correction. If complete, the NASA EPB shall submit the reports by certified mail to the St. Johns River Water Management District.

CHAPTER 9. DRINKING WATER

9.1 About the Program

At KSC, we use tap water for a wide variety of purposes. Some of these are for personal use such as drinking, cooking, and bathing, while some purposes are for public activities such as landscape irrigation, fire fighting, air conditioning, and construction. Commercial and industrial operations also place heavy demands on the public water supply. These include launch operations such as sound suppression and deluge/wash operations, and shuttle and launch vehicle processing operations.

The State of Florida has delegated the Florida Department of Environmental Protection (FDEP) to promulgate regulations and administer programs for the enforcement of the State and Federal laws concerning our drinking water. FDEP has developed standards and operating practices to protect the health and safety of the public and is responsible for enforcing these regulations and permitting treatment and distribution systems.

KSC is subject to regulation under the Safe Drinking Water Act as a supplier since it operates a Non-Transient, Non-Community "Public Water System" as defined by State and Federal regulations. KSC is further categorized by the regulations as a Consecutive system since we receive our source water from another wholesale public water system. The City of Cocoa provides KSC potable (drinking) water obtained from surface water from the Taylor Creek Reservoir and groundwater from wells located in east Orange County. The City of Cocoa operates the Claude H. Dyal Water Treatment Plant that treats the raw water from these sources. Water from this plant is transmitted to KSC via a 24" water main to KSC's south boundary at Gate #2. At this interface point, boostered pumps at the Water Pump Station (N6-1007) maintain the flow-rate of water, while chlorine and a corrosion inhibitor are added to maintain the proper chlorine residual and to maintain the integrity of the distribution system. Water flows through a 24" primary distribution system from the South Gate to the VAB area. At the intersection of Schwartz Road and S.R. 3, the water is again chlorinated to maintain the residual concentration. Throughout KSC there are various storage systems and secondary pump systems to supply water needs for fire suppression, launch activities, and potable water needs.

9.2 Compliance Monitoring & Reporting

The Safe Drinking Water Act gives the Environmental Protection Agency (EPA) the responsibility for setting national drinking water standards that protect the health of the 250 million people who get their water from public water systems. Since 1974, EPA has set national safety standards for over 80 contaminants that may occur in drinking water. While EPA and state governments set and enforce standards, local governments and private water suppliers have direct responsibility for the quality of the water that is delivered to the tap. The KSC water distribution system is maintained, tested, and treated to ensure that the quality of water delivered measures up to the Federal and State standards. These actions are continuously documented due to permitting and reported to the regulatory agencies governing the KSC Potable Water System.

It is the responsibility of the Joint Base Operations Support (JBOSC) contractor to operate and maintain the KSC water treatment and distribution system in accordance with all applicable laws and regulations. The operation of the water system includes

developing and implementing a monitoring and reporting program to ensure compliance with regulatory criteria and provide water throughout the KSC distribution system that is safe and acceptable for public consumption.

9.3 Construction or Modification of Drinking Water Treatment or System

All projects that include possible impacts to the KSC potable water systems must consult with the JBOSC Engineering, Operations and Maintenance, and Environmental offices. These groups shall be included and consulted for input and regulatory guidance during the planning and design phases of the project. The NASA EPB shall also be included in the design reviews for projects that shall impact potable water systems.

The organization responsible for a project that provides modification, maintenance, or emergency repair of the KSC potable water system, whether a permit is necessary or not, shall ensure that regulatory criteria, best engineering practices, codes, specifications and standards are followed. This includes:

(1) Flushing and disinfection is required unless work is completed under pressure with no possibility of contamination of the line/system.
(2) A copy of satisfactory bacteriological sample results taken on two consecutive days, upstream, downstream and at the point of the repair, must be submitted to the NASA EPB
(3) All work is to be completed without jeopardizing the health and safety of personnel due to effects of the work on the KSC potable water system.

Construction projects involving work on the KSC water distribution system require varying degrees of regulatory oversight depending on the nature of the project and the work involved. Listed below are the levels of regulatory action required for projects at KSC.

The following activities require FDEP approval but not a permit:

(1) Discontinuance of existing PW treatment, pumping, or storage facilities;
(2) Changing PW treatment chemicals;
(3) Addition of chemicals for tracer study;
(4) Demonstration testing of existing PW facilities that discharge directly to downstream treatment facilities;
(5) Pilot plants that discharge to a PWS.

The following activities require FDEP notification, but not approval:

(1) Replacement of existing PW treatment, pumping, or storage equipment at same general location and same design and capacity;
(2) Replacement of existing water mains with new mains at same location and no more than 2 sizes larger or no larger than minimum sizes in RSWW;
(3) Relocation of < 100 feet PW mains;
(4) Alteration of structures not used to treat, store, or handle PW but used to house PW treatment or pumping facilities;
(5) Alarm equipment required under FAC Chapter 62-555.

The following activities do not require FDEP approval, notification, or permitting:

(1) Discontinuing use of existing water mains;
(2) Temporary chlorine/chloramine conversions;
(3) Demonstration testing of existing WTP that discharges to waste or to upstream treatment facilities;
(4) Pilot Plants that discharge to waste;
(5) Maintenance or repair work;
(6) Discontinuing use of existing water mains;
(7) Demonstration testing of existing WTP that discharges to waste or to upstream treatment facilities;
(8) Pilot Plants that discharge to waste;
(9) Maintenance or repair work;
(10) Well vents, valves, flow meters, backflow preventers, fire hydrants or leads;
(11) Water service line to single building including dedicated fire protection and irrigation systems;
(12) Electrical or instrumentation work not affecting compliance with FAC Chapter 62-555;
(13) Construction or alteration of structures that neither treat, store, nor handle PW or house PW treatment/pumping facilities;
(14) Roads, landscaping, and fencing**.**

All other actions not specifically listed above require a construction permit from the FDEP.

All correspondence with regulatory agencies regarding the KSC water system is to originate from the NASA EPB. All NASA and contractor organizations (including design, construction, environmental, or O&M organizations) shall process all notifications, permit applications, requests for approval, compliance monitoring, reports, requests for clearance, and any other submittal, including email, to a regulatory agency through the NASA EPB. The exceptions to this requirement are Malfunction reports which are to be submitted by JBOSC to FDEP.

9.4 Projects That Require Permitting

The Specific Permit and the General Permit are the two types of permit applications to be used for construction or modifications to drinking water treatment or distribution systems.

A General Permit application is used for:

(1) Water Main Extensions not covered under Specific Permits
(2) Lead/Copper Corrosion Control
(3) Iron/Manganese Sequestering agents

A General Permit submittal is not actually a permit, but is instead a way of notifying the Department that the project meets certain regulatory criteria and does not require permitting under the more detailed requirements of a Specific Permit. The Department issues a document, based upon the information provided to them in the General Permit application that they either agree with the submittal (issuance of a GP) or disagree with the submittal (denial of a GP).

The General Permit is evaluated by the Department on the quality of the submittal. There are no phone calls or e-mails regarding clarification of the submittals. The Department cannot request additional information nor place Specific Conditions in a General "Permit". Therefore the submittal must be correct the first time or the application shall be denied and the application (including fee) must be resubmitted entirely.

The General Permit application requires submittal of a completed Department application form 62-555.900(7), "Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs" signed and sealed by a professional engineer registered in Florida and a site plan or sketch showing:

(1) The size and approximate location of water mains, hydrants, valves, meters, and blow-offs;
(2) How connections to existing mains are made; and
(3) Hydraulic analysis (if water main - not service connection) < 3 inches.

A permit application processing fee of $250 shall be paid by the NASA EPB.

Do not submit the following with the General Permit application:

(1) plan profile sheets
(2) demolition drawings
(3) storm water plans
(4) contour maps
(5) construction notes/details

A Specific Permit application is used when the project involves:

(1) Potable water treatment, pumping, or storage facilities;
(2) Water main extensions that:
    (a) are dry lines;
    (b) are in petroleum- or solvent-contaminated areas;
    (c) interconnect previously separated PWSs;
    (d) create "New" Systems;
    (e) convey raw or partially-treated drinking water;
    (f) use conflict manholes

The Specific Permit application requires submittal of a completed Department application form 62-555.900(1), "Application for a Specific Permit to Construct PWS Components", and either a preliminary design report or drawings, specifications, and design data that contains all pertinent information required under subsection 62-555.520(4), F.A.C.) The plans and specifications or engineering report shall be signed and sealed by a Professional Engineer registered in Florida. A permit application processing fee of $350 shall be paid by the NASA EPB.

When the Specific Permit application is used, the Department is authorized to request additional information for incomplete application submittals and can place Specific Conditions in the body of a permit once it is issued.

9.5 Permitting Process

The initiating organization is responsible for preparing the permit application and all supporting documentation and drawings, including signing and sealing by a Professional Engineer (P.E.). The initiating organization is responsible for obtaining the signatures of all system operational authorities as indicated on the permit application. The initiating organization is responsible for submitting the completed permit application package to the NASA EPB for review.

The NASA EPB is responsible for reviewing all application submittals. If incomplete, the permit application shall be returned to the initiating organization for correction. If complete, the NASA Responsible Official shall sign the application as the Permittee and the application shall be sent by certified mail to the Department.

Within thirty days after receipt of an application for a permit and the correct processing fee the Department shall review the application. For Specific Permit applications, the Department is authorized by law to request submittal of additional information. The NASA EPB shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department. The initiating organization shall provide a response to correct or clarify the issues identified in the Department's request letter. The initiating organization shall submit the response to the NASA EPB to forward to the Department.

The initiating organization must notify the NASA EPB it shall take more than ninety days to respond to a request for additional information. The NASA EPB shall notify the Department in writing of the circumstances, at which time the application shall be held in active status for one additional period of up to ninety days. Specific permits shall be approved or denied within 90 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the permit application, whichever occurs last.

For General Permit applications, the Department is not authorized to request additional information and the application shall be denied if there any deficiencies or omissions. The Department shall issue a letter within 30 days of receiving the application explaining the reasons for the denial. The application must be revised or the project must be upgraded to a Specific permit application and be resubmitted, including fee, through the NASA EPB to the Department.

If satisfied with the permit application, the Department shall email a "Notification of Use of General Permit" or the Specific permit to the NASA EPB. NASA EPB shall forward the Notification or the permit to the initiating organization.

The initiating organization is responsible for ensuring that the design information submitted to the Department in the permit application and the design information in the final work package or construction contract are equivalent.

The initiating organization is responsible for ensuring that the entity performing the work abides by all regulations and permit conditions. Failure to do so shall result in the Permittee being subject to appropriate enforcement action by the Department. Any penalties incurred by the Permittee (NASA) by a Contractor's actions or lack thereof shall result in the penalties being deferred to the Contractor.

9.6 Letter of Clearance

A letter of clearance must be issued by the Department prior to placement of the project into service for any purpose other than testing for leaks or testing equipment operation. To obtain the clearance letter, the engineer-of-record must submit to the initiating organization a clearance package which shall contain:

(1) Record drawings;
(2) Department From 62-555.900(9), F.A.C, “Request for Letter of Release to Place Water Supply System into Service”;
(3) A copy of the Department Notification letter; and
(4) Satisfactory bacteriological test results (with chlorine residuals indicated) taken on two consecutive days from the locations indicated on the Notification letter. Water sample forms must indicate specific recommended sample locations and the File Number indicated on the Department Notification letter. Water sample results are valid for sixty days.

The initiating organization shall forward two sets of the clearance package to the NASA EPB. The NASA EPB is responsible for reviewing this submittal and forwarding it to the Department.

The Department shall review the clearance request and shall approve or deny the clearance within 14 business days after Department receipt of the clearance package for a general permit, or within 30 business days for an individual permit. If not satisfied with the clearance request, the Department shall email a notice of permit denial that shall contain the reasons for the denial to the NASA EPB.

NASA EPB shall forward the permit denial notification to the initiating organization that shall correct any deficiencies or omissions and resubmit the clearance request through the NASA EPB to the Department.

When satisfied with the clearance request, the Department shall email the “Letter of Clearance” to the NASA EPB. The NASA EPB shall forward the Notification to the initiating organization.

CHAPTER 10. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

10.1 About the Program

Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. Since its introduction in 1972, the NPDES permit program is responsible for significant improvements to our Nation's water quality.

The NPDES program is a Federal program to eliminate point source and stormwater discharges to receiving waters of the United States. The NPDES program is mandated in the Federal Clean Water Act and is administered by the U.S. Environmental Protection Agency (EPA) as directed by Title 40, PART 122, and Code of Federal Regulations (CFR). In October 2000, EPA authorized the Florida Department of Environmental Protection (FDEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Country lands). FDEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes (F.S.). As the NPDES stormwater permitting authority, FDEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities.

10.2 Point Source Discharges

In most instances, NPDES permit requirements are incorporated in the state wastewater permit, giving the permittee a single permit with one set of standards to operate under. The NPDES requirements at KSC for industrial wastewater discharges are discussed in the Industrial Wastewater section of the KNPR.

10.3 Stormwater from Industrial Activities

To control the mobilization of industrial pollutants (resulting from exposed materials and activities) by stormwater runoff, Florida's NPDES stormwater program regulates "stormwater discharges associated with industrial activity," which includes eleven categories of industrial activity. The NPDES Stormwater program for industrial activities is administered by the Department as directed by Rule 62-621.300(5), F.A.C., “Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity.” Operators of industrial facilities that meet the criteria for coverage under the program must obtain a generic or individual NPDES permit and implement a stormwater pollution prevention plan (SWPPP).

The NASA EPB has obtained a permit (Permit Number FLR05F574) under this program to cover operations at the Transfer, Storage, and Disposal Facility (TSDF) under Sector K. Hazardous Waste Treatment Storage or Disposal Facilities

KSC's permit became effective on October 22, 2002. Per regulations, the first year of permit coverage is 2002; the second year of permit coverage is 2003; and so on. It is the responsibility of the organizations operating this facility to develop and implement a SWPPP in accordance with all regulations and permit conditions.

Implementation of the SWPPP includes conducting any required analytical or visual monitoring of stormwater runoff. Analytical monitoring shall be conducted in the second (2003) and fourth (2005) years of permit coverage. All analytical monitoring events shall be recorded on Discharge Monitoring Reports (DMRs) and submitted to the EPB by the 28th day of the month following the reporting period (quarterly). The quarterly DMRs shall be submitted to the Department by the NASA EPB by March 31 of the year following the monitoring year (i.e., 2004 and 2006).

10.4 Stormwater from Construction Activities

Stormwater runoff from construction activities can have a significant impact on water quality by contributing sediment and other pollutants to water-bodies. All projects that include possible land disturbance must consult with the NASA EPB for project input and regulatory guidance during the planning and design phases of the project. Land disturbance includes, but is not limited to soil disturbance, clearing, grading, trenching, and excavation. At KSC, construction activities include activities performed by Contractor organizations as routine Operations and Maintenance (O&M).

The organization responsible for a project that provides land disturbance, whether a permit is necessary or not, shall ensure that regulatory criteria, best engineering practices, codes, specifications and standards are followed. This includes the implementation of erosion and turbidity controls. Some commonly used controls include:

a. Structural Controls
   (1) Retention Ponds. Permanent structures designed to allow time for sediments to settle and water to infiltrate the ground.
   (2) Temporary Sediment Basins. Structures designed to detain sediment-laden runoff from disturbed areas long enough for sediments to settle out and control the release of stormwater.
   (3) Entrance/Exit Controls. Temporary controls, such as gravel, used to stabilize the entrances/exits to the site to reduce the amount of soils transported onto paved roads by vehicles (known as "track-out").
   (4) Silt Fencing. A temporary erosion and sediment control used to prevent dirt from entering waterways before bare soil is stabilized with vegetation.
   (5) Berms. A temporary erosion and sediment control that physically prevents polluted runoff from entering nearby storm drain inlets and waters.
b. Non-Structural Controls
   (1) Stabilization. Techniques such as sodding, seeding/ mulching, and stone cover, which reduce the erosion of exposed soils and steep grades.
   (2) Phased Construction. Scheduling construction to occur during the dry season or to minimize the amount of land cleared at any one time.
   (3) Good Housekeeping. Techniques such as oil and fuel containment, spill prevention and clean-up, and street sweeping of "tracked-out" soils, which help prevent the contamination of stormwater runoff.

An NPDES permit is not required for activities that disturb less than or equal to one (≤1) acre of land.

An NPDES permit is required for all activities that disturb greater than one (>1) acre of land.

It is important to note that the permit required under the NPDES Stormwater permitting program is separate from the Environmental Resource Permit (ERP) required under Chapter 62-25 or 40C-4, F.A.C.

10.5 Projects That Require Permitting

Operators of construction activities must obtain coverage under an NPDES stormwater permit and implement appropriate pollution prevention techniques to minimize erosion and sedimentation and properly manage stormwater. The majority of construction activities requiring an NPDES stormwater permit shall likely qualify for the Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP) (DEP Document 62-621.300(4)(a)), which is applicable to both large and small construction (62-621.300(4), F.A.C.).

The CGP requires submittal of a completed Department application, "Construction General Permit (CGP) Notice of Intent (NOI) To Use Generic Permit For Stormwater Discharge From Large And Small Construction Activities" (DEP Form 62-621.300(4)(b)) to obtain permit coverage.

An NOI processing fee as required by 62-4.050(4)(d), F.A.C. shall be paid by the NASA EPB. The fee schedule is as follows:

(1) Large Construction (disturbs 5 or more acres of land) is $300.
(2) Small Construction (disturbs between 1 and 5 acres) is $150.

A Stormwater Pollution Prevention Plan (SWPPP) must be developed and implemented to be in compliance with the permit. The CGP contains all requirements for the SWPPP. In part, the SWPPP must include the following:

(1) A site evaluation of how and where pollutants may be mobilized by stormwater
(2) A site plan for managing stormwater runoff
(3) Identification of appropriate erosion and sediment controls and stormwater best management practices (BMPs) to reduce erosion, sedimentation, and stormwater pollution
(4) A maintenance and inspection schedule
(5) A recordkeeping process
(6) Identification of stormwater exit areas.

The NOI must be resubmitted every five years to maintain coverage if the construction activity extends beyond a 5-year period. At the end of the construction activities, a Notice of Termination (NOT) (DEP Form 62-621.300(6)) must be submitted to the NPDES Stormwater Notices Center to discontinue permit coverage. Permit coverage may be terminated when the eligibility requirements for termination specified in the CGP are met.

10.6 Permitting Process

The initiating organization is responsible for preparing the NOI, the SWPPP, and all other supporting documentation and drawings. The initiating organization is responsible for submitting one copy of the completed NOI to the NASA EPB for review.

The NASA EPB is responsible for reviewing all application submittals. If incomplete, the NOI shall be returned to the initiating organization for correction. If complete, the NASA Responsible Official shall sign the NOI as the Permittee and the application shall be sent by certified mail to the Department NPDES Stormwater Notices Center. Authorization is usually granted 48 hours after the date the complete NOI is post-marked to the Notices Center. The Notices Center shall send an acknowledgement letter to the NASA EPB after receipt and processing of the complete NOI and fee. The NASA EPB shall forward the acknowledgement letter to the initiating organization.

The initiating organization is responsible for ensuring that the requirements of the CGP and the SWPPP are included in the final work package or construction contract for the project. The initiating organization is responsible for ensuring that the entity performing the work abides by all regulations and permit conditions. Failure to do so shall result in the Permittee (NASA) being subject to appropriate enforcement action by the Department. Any penalties incurred by the Permittee by a Contractor's actions or lack thereof shall result in the penalties being deferred to the Contractor.

A Notice of Termination (NOT) (DEP Form 62-621.300(6)) must be submitted to the NPDES Stormwater Notices Center to discontinue permit coverage. Permit coverage may be terminated when the eligibility requirements for termination specified in the CGP are met. The initiating organization shall forward one copy of the NOT to the NASA EPB. The NASA EPB is responsible for reviewing this submittal and forwarding it to the Department.

The Notices Center shall send an acknowledgement letter to the NASA EPB after receipt and processing of the complete NOT. The NASA EPB shall forward the acknowledgement letter to the initiating organization.

CHAPTER 11.STORMWATER

11.1 About the Program

Rain is an inevitable part of living in Florida. Rainfall is soaked up by the soil, collected by streams, rivers, and ponds, and utilized by vegetation. However, as Florida becomes more developed and buildings, roads, and parking lots replace our natural areas, we reduce the areas available to store rainfall. When this happens, the volume of rainfall that flow offsite increases and creates possible flooding issues in downstream areas. Rainfall runoff from parking lots, buildings, roads, and other manmade structures collects a wide variety of pollutants such as grease and oils, nutrients, and suspended solids. These pollutants are carried offsite into rivers and streams which then contaminate water sources used for drinking water, habitats for aquatic species, and recreational activities.

To manage the issues of flooding and water contamination, the State of Florida created a program that requires the construction of surface water management systems to control stormwater runoff. The Environmental Resource Permit (ERP) program was developed with two main goals. The first is to ensure that any type of new development or changes in land use shall not cause flooding by adversely affecting the natural flow and storage of water. The second purpose is to prevent stormwater pollution in lakes and streams and to protect wetland environments. This program is administered by the St. Johns River Water Management District and by the Florida Department of Environmental Protection. These two agencies are responsible for reviewing stormwater system designs and issuing permits for their construction and operation.

KSC has over ninety surface water management systems to control stormwater runoff. The four largest stormwater systems at KSC are the Region I system that serves the Industrial Area, the Sub-basin 11 system that serves the western portion of the VAB Area, the VAB South system that serves the southern portion of the VAB area, and the SLF system that serves the Shuttle Landing Facility.

11.2 Construction or Modification of Stormwater Management Systems

All projects that include construction of new impervious areas (buildings, sidewalks, roads, driveways, etc.), modification of existing drainage conveyances, modification of existing impervious structures, or construction of new drainage conveyances must be reviewed by the Engineering, Environmental, and Grounds Maintenance organizations of the JBOSC. These groups shall be included and consulted for input and regulatory guidance during the planning and design phases of the project. The NASA EPB shall be included in the design reviews or other meetings for projects that may possibly impact stormwater management systems.

The organization responsible for a project that provides modification, maintenance, or emergency repair of a KSC stormwater management system, whether a permit is necessary or not, shall ensure that regulatory criteria, best engineering practices, codes, specifications and standards are followed, including the installation and maintenance of all necessary erosion and turbidity control devices.

These projects may require regulatory permitting depending on the nature of the project and the work involved. Listed below are the general criteria used to determine the necessity of a permit for projects at KSC. Permits are required for the following activities:

a. A permit is required for construction (including operation and maintenance) of a stormwater management system which serves a project that exceeds any of the following thresholds:
   (1) Construction or modification of 4,000 square feet or more of impervious or semi-impervious surface area subject to vehicular traffic. This area includes roads, parking lots, driveways, and loading zones;
   (2) Construction or modification of 5,000 square feet or more of building area or other impervious area not subject to vehicular traffic; or
   (3) Construction of 5 acres or more of recreational area.
   (4) These thresholds include all cumulative activity that occurs on or after September 25, 1991.
b. A permit is required for alteration, removal, reconstruction, or abandonment of existing stormwater management systems.
c. Impacts to wetlands or surface waters, as defined by state and Federal agencies.

All correspondence with regulatory agencies regarding work at KSC is to originate from the NASA EPB. All NASA and contractor organizations (including design, construction, environmental, or O&M organizations) shall process all notifications, requests for approval, compliance monitoring, reports, requests for clearance, and any other submittal, including email, to a regulatory agency through the NASA EPB (TA-C3).

11.3 Permitting Process

The initiating organization is responsible for preparing the permit application (Form 40C-4.900(1) Attachment A) and all supporting documentation and drawings, including signing and sealing by a Professional Engineer (P.E.).

The initiating organization is responsible for submitting six copies of the completed permit application package to the NASA EPB for review.

The NASA EPB is responsible for reviewing all application submittals. If incomplete, the permit application shall be returned to the initiating organization for correction. If complete, the NASA Responsible Official shall sign the application as the Applicant and as the Land Owner and the application shall be sent by certified mail to the St. Johns River Water Management District.

The District is authorized by regulations to take no more than 30 days to review a permit application for completeness and accuracy. If not satisfied with the permit application, the District shall request additional information to correct any deficiencies or omissions. The response to the District shall be submitted to the NASA EPB for review and then forwarded to the District. This process may continue until the application is deemed complete by the District.

When satisfied with the permit application, the District shall issue and mail the permit to the NASA EPB who shall then forward the permit to the initiating organization. The local District office issues Noticed General and General Permits within 30 days of an application package being approved. Projects that require Individual Permits are authorized by the District's Governing Board at their monthly meetings within 90 days of an application package being approved.

The initiating organization is responsible for ensuring that the design information submitted to the District in the permit application and any subsequent submittals is equivalent to the design information in the final work package and/or construction contract. The permit and its conditions must also be included in the construction contract.

In no case shall construction or operation begin prior to approval and receipt of a required permit nor should the operation violate the conditions of a permit. The initiating organization is responsible for ensuring that the entity performing the work abides by all permit conditions. Failure to do so shall result in the Permittee being subject to appropriate enforcement action by the District. Any penalties incurred by the Permittee (NASA) by a Contractor's actions or lack thereof shall result in the penalties being deferred to the Contractor.

Prior to the start of work, the initiating organization shall submit a Construction Commencement Notice (Form 40C-4.900(3), Attachment B) to the NASA EPB. The form must be submitted at least five days before the start of construction, so that the NASA EPB can submit the form to the District 48 hours prior to the start date.

The initiating organization shall periodically inspect the project site to ensure compliance with all permit conditions. A major compliance issue is the installation/implementation of turbidity and erosion control measures that are acceptable to the regulatory agencies. In the event permit violations occur, it is the initiating organizations responsibility to notify the NASA EPB and correct the problems internally or request support from NASA EPB for assistance if permit interpretation or consultation with a regulatory agency is necessary.

A letter of clearance must be issued by the District prior to placement of the project into service. The initiating organization shall forward three sets of the information required for the clearance request to the NASA EPB. The clearance request package shall include as-built drawings and the appropriate As-Built Certification Form as specified by the permit, all signed and sealed by the engineer-of-record. If a clearance package cannot be developed within the timeframe indicated in the permit, a request for extension must be processed through the NASA EPB.

The NASA EPB is responsible for reviewing this submittal and forwarding it to the District. The District shall review the clearance request and may choose to inspect the completed project. The NASA Environmental Branch shall be responsible for scheduling the regulatory inspection and shall accompany District personnel during the inspection. If the inspection reveals discrepancies in the permitted work, the initiating organization shall be notified and must arrange to have the discrepancies corrected or explained. When the deficiencies have been corrected, it is the initiating organizations responsibility to notify the NASA EPB so that the project may be re-inspected by the District.

11.4 Monitoring

The EPB shall be responsible for implementing an internal inspection program for KSC. Schedules for internal inspections depend upon staffing constraints and the conditions of a permit. The purpose of internal inspections is to ensure activities are in compliance with their respective permits or with the regulations governing their operations. These inspections shall not assess punitive damages such as those assessed by the regulatory agencies; their purpose is to identify compliance concerns so they can be corrected.

11.5 Violations of Permit Conditions

The lead environmental office is responsible for ensuring procedures have been developed to ensure compliance with permit requirements within their organization. The lead environmental office is responsible for reporting apparent permit violations to the EPB. The EPB is responsible for reporting apparent permit violations to the appropriate State or Federal agencies and negotiating compliance requirements in cooperation with the lead organization.

CHAPTER 12. DOMESTIC WASTEWATER

12.1 About the Program

At KSC, tap water is used for a wide variety of purposes. Some of these are for personal use such as drinking, cooking, and bathing. The majority of KSC's water consumption is related to the daily industrial processes involved with Shuttle, payload, and ground support operations. Whatever the use, the wastewater generated by these processes must be managed to protect public health, water quality, recreation, fish and wildlife, and the aesthetic appeal of our waterways.

The State of Florida has delegated the Florida Department of Environmental Protection (FDEP) to promulgate regulations and administer programs for the enforcement of the State and Federal laws concerning the disposal of domestic wastewater. FDEP has developed the Domestic Wastewater Program to set treatment standards and operating practices to protect the health and safety of the public, to protect aquifers, lakes and rivers from harm, and to promote reuse of reclaimed water. FDEP and State Health Departments are responsible for enforcing these regulations and permitting treatment systems.

KSC maintains two collection/transmission systems, one located in the Industrial Area and one in the VAB Area, that provide service for the majority of NASA and contractor personnel at KSC. These systems transport raw wastewater to the CCAFS Regional Plant located on the Cape Canaveral Air Force Station where the waste is treated and disposed. There are a number of septic tank systems throughout KSC that typically support small offices or temporary facilities. Only a small percentage of the existing septic tanks are permitted under Chapter 64E-6, FAC. The remaining septic tanks were constructed prior to the implementation of permitting regulations and are therefore grand fathered in under these rules.

The JBOSC is responsible for maintaining the domestic wastewater treatment systems at KSC.

12.2 Wastewater Discharges

Discharges into the JBOSC maintained domestic wastewater treatment systems shall comply with CFR 403.6, National Pretreatment Standards, as well as 40 CFR Chapter 1, Subchapter N for pretreatment limits for specific industrial sub-categories.

No person shall discharge, or cause to be discharged, any uncontaminated waters such as stormwater, groundwater, subsurface drainage, surface water, uncontaminated process water, air-conditioning condensate water, or discharge from a cooling tower to the wastewater treatment system, unless authorized by the responsible JBOSC Maintenance Engineer.

Waste stream discharges into the wastewater treatment system must be characterized by the waste stream generator and approved by JBOSC Maintenance Engineering prior to discharge into the JBOSC maintained Domestic Wastewater Treatment Systems. The producer of the waste stream must gather all necessary waste stream data and have the waste stream characterized. Upon completion of characterization, the waste stream

generator must submit a Process Waste Questionnaire (PWQ) to the JBOSC Waste Management Group. The PWQ shall be evaluated and if identified as a Domestic Wastewater discharge candidate, a JBOSC Industrial Wastewater Discharge Request and Authorization Form shall be submitted for the requester. Upon final determination of the waste stream, a Technical Response Package (TRP) shall be issued to the requester with instructions on how to manage the waste stream prior to and for disposal. Industrial wastewater generators whose waste is approved for discharge to the Domestic Wastewater collection system as part of the TRP shall get specific requirements on who to contact and how to discharge the waste stream.

12.3 Onsite Sewage Treatment and Disposal Systems (Septic Tanks, Domestic Treatment Plants, Holding Tanks, and Chemical Toilets)

Onsite Sewage Treatment and Disposal Systems (OSTDS) at KSC are regulated by the Brevard County Health Department. All Onsite Sewage Treatment Disposal Systems are operated and maintained in accordance with all Federal, State and local rules and regulations. Specifically, applicable Florida State Regulation Chapter 64E-6, FAC, "Standards for Onsite Sewage Treatment and Disposal Systems" shall be followed. Under no circumstances shall onsite sewage treatment and disposal systems be used to treat industrial wastewater.

The use of onsite sewage treatment and disposal systems is prohibited except when a connection to a Domestic Wastewater Treatment Facility is infeasible. A connection to a Domestic Wastewater Treatment Facility may be deemed infeasible based on, but not limited to, the following criteria:

(1) A lack of existing infrastructure
(2) Wastewater flow characteristics
(3) Cost constraints
(4) Facility Use
(5) The number of personnel utilizing the facility

The installation of a permanent onsite sewage treatment and disposal system must be approved by the JBOSC Maintenance Engineering Office. If an onsite sewage treatment and disposal system is authorized for installation, the system shall be designed and operated in accordance with Rule 64E-6, FAC. Permits are required by the Brevard County Health Department for the installation or modification of on-site sewage treatment and disposal systems. Permitted septic tanks are also required to submit operation permit applications on an annual basis. This is done through the NASA EPB.

12.4 Chemical Toilets

Portable chemical toilets are provided by the JBOSC contractor for use at JBOSC maintained facilities and at remote locations. Portable chemical toilets are also provided to facilities during maintenance and repair activities when it is necessary to take the sanitary infrastructure out of service. These facilities are not provided to construction contractors, or others that are not in a mission support status. Portable toilets may be requested through the JBOSC Work Control Customer Support Office. Upon delivery of a chemical toilet the Sanitary Service provider shall add the location to the normal route for servicing.

12.5 Enforcement

Any wastewater generating activity found to be in violation of any provisions of this management plan shall be served with written notice stating the nature of the violation and shall be provided a reasonable time limit for the satisfactory correction of the violation. The director of the generating activity is responsible for controlling all non domestic waste discharges within his or her organization.

Any wastewater generating activity that continues any violation beyond the time limit provided for in the preceding paragraph shall be guilty of a violation of this plan and the director shall be referred for enforcement action by the Supervisor Water/Wastewater Systems.

The JBOSC Supervisor of Water/Wastewater Systems may suspend without notice the wastewater treatment service for a wastewater generating activity, when such suspension is necessary to stop an actual or threatened discharge which presents, or may present, an imminent or substantial endangerment to the health or welfare of personnel.

The JBOSC Supervisor of Water/Wastewater Systems, upon reasonable notice and opportunity to respond, may suspend the wastewater treatment service for a wastewater generating activity when such suspension is necessary, in the opinion of JBOSC Maintenance Engineering, Environmental and Water and Waste, to stop an actual or threatened discharge which presents an endangerment to the environment, which threatens to interfere with the operation of the wastewater treatment plant, or causes the respective WWTF to violate any conditions of its FDEP operating permit.

Any wastewater generating activity notified of a suspension of its wastewater treatment service shall immediately stop or eliminate their waste discharge. In the event of a failure of the non-domestic waste generating activity to voluntarily comply with the suspension order, the Supervisor of Water/Wastewater shall take steps as deemed necessary, including immediate severance of the sewer connection in order to prevent or minimize damage to the Domestic Wastewater system or endangerment to personnel. The Supervisor of Water/Wastewater shall reinstate the wastewater treatment service upon satisfactory proof of the elimination of the non-complying discharge.

12.6 Construction or Modification of Domestic Wastewater Collection/Transmission Systems

All projects that include possible impacts to KSC domestic wastewater systems must consult with the JBOSC Engineering, Operations and Maintenance, and Environmental offices. These groups shall be included and consulted for input and regulatory guidance during the planning and design phases of the project. The NASA EPB shall also be included in the design reviews for projects that shall impact these systems.

The organization responsible for a project that provides modification, maintenance, or emergency repair of the KSC domestic wastewater system, whether a permit is necessary or not, shall ensure that regulatory criteria, best engineering practices, codes, specifications and standards are followed.

The following activities do not require a collection system permit from the Department (62-604.600(2), FAC):

(1) Replacement of any facilities with new facilities of the same capacity at the same location as the facilities being replaced;
(2) Construction of any single gravity or non-gravity individual service connection from a single building to a gravity collection system; however, construction of a non-gravity connection from other than a single family residence to an existing force main system requires a permit;
(3) Construction of a low pressure (grinder pump or STEP) or vacuum sewer individual service connection where the system serving the area has been previously permitted by the Department;
(4) Installation of odor control facilities;
(5) Modifications associated with routine maintenance; or
(6) Modifications associated with ancillary and electrical equipment and structures.

All other actions not specifically listed above require a construction permit from the Department.

All correspondence with regulatory agencies regarding activities at KSC is to originate from the NASA EPB. All NASA and contractor organizations (including design, construction, environmental, and O&M organizations) shall process all notifications, permit applications, requests for approval, compliance monitoring, reports, requests for clearance, and any other submittal, including email, to a regulatory agency through the NASA EPB. The only exception to this requirement is the submittal of Malfunction reports by JBOSC for sewage line breaks.

12.7 Projects That Require Permitting

The General Permit and the Individual Permit are the two types of permit applications to be used for construction of or modifications to domestic wastewater collection/ transmission systems.

A General Permit application is used when the wastewater facility to which the system shall be connected (62-6-4.600(6):

(1) Has the capacity to receive the wastewater generated by the proposed collection system;
(2) Is in compliance with the capacity analysis requirements of Rule 62-600.405, F.A.C.;
(3) Is not under a Department Order associated with effluent violations or the ability to treat wastewater adequately; and
(4) Shall provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

A General Permit submittal is not actually a permit, but is instead a way of notifying the Department that the project meets certain regulatory criteria and does not require permitting under the more detailed requirements of an Individual Permit. The Department issues a document, based upon the information provided to them in the General Permit application that they either agree with the submittal (issuance of a GP) or disagree with the submittal (denial of a GP).

The General Permit is evaluated by the Department on the quality of the submittal. There are no phone calls or e-mails regarding clarification of the submittals. The Department cannot request additional information nor place Specific Conditions in a General "Permit". Therefore the submittal must be correct the first time or the application shall be denied and the application (including fee) must be resubmitted entirely.

The General Permit application requires submittal of a completed Department application form 62-604.300(8)(a), a site plan or sketch showing the size and approximate location of new or altered gravity sewers, pump stations and force mains; showing the approximate location of manholes and isolation valves; and showing how the proposed project ties into the existing or proposed wastewater facilities. The site plan or sketch shall be signed and sealed by a professional engineer registered in Florida. A permit application processing fee of $250 shall be paid by the NASA EPB.

Collection/transmission systems not meeting the General permit criteria listed above must submit an application for an Individual permit (62-604.600(7).

The Individual Permit application requires submittal of a completed Department application form 62-604.300(8)(a), as well as plans and specifications, or alternatively, an engineering report. Plans and specifications and engineering reports shall be prepared in accordance with the applicable provisions of Chapters 10 and 20 of *Recommended Standards for Wastewater Facilities*. The plans and specifications or engineering report shall be signed and sealed by a Professional Engineer registered in Florida. A permit application processing fee of $500 (≥10EDUs) or $300 (<10EDUs) shall be paid by the NASA EPB.

When the Individual Permit application is used, the Department is authorized to request additional information for incomplete application submittals and can place Specific Conditions in the body of a permit once it is issued.

12.8 Permitting Process

The initiating organization is responsible for preparing the permit application and all supporting documentation and drawings, including signing and sealing by a Professional Engineer (P.E.), when required. The initiating organization is responsible for obtaining the signatures of all system operational authorities as indicated on the permit application. The initiating organization is responsible for submitting the completed permit application package to the NASA EPB for review.

The NASA EPB is responsible for reviewing all application submittals. If incomplete, the permit application shall be returned to the initiating organization for correction. If complete, the NASA Responsible Official shall sign the application as the Permittee and the application shall be sent by certified mail to the Department.

Within thirty days after receipt of an application for a permit and the correct processing fee the Department shall review the application. For Individual Permit applications, the Department is authorized by law to request submittal of additional information. The NASA EPB shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department. The initiating

organization shall provide a response to correct or clarify the issues identified in the Department's request letter. The initiating organization shall submit the response to the NASA EPB to forward to the Department.

The initiating organization must notify the NASA EPB it shall take more than ninety days to respond to a request for additional information. The NASA EPB shall notify the Department in writing of the circumstances, at which time the application shall be held in active status for one additional period of up to ninety days. Individual permits shall be approved or denied within 90 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the permit application, whichever occurs last.

For General Permit applications, the Department is not authorized to request additional information and the application shall be denied if there any deficiencies or omissions. The Department shall issue a letter within 30 days of receiving the application explaining the reasons for the denial. The application must be revised or the project must be upgraded to an Individual permit application and be resubmitted, including fee, through the NASA EPB to the Department.

If satisfied with the permit application, the Department shall email a "Notification of Use of General Permit" or the Individual to the NASA EPB. NASA EPB shall forward the Notification or the permit to the initiating organization. The initiating organization is responsible for ensuring that the design information submitted to the Department in the permit application and the design information in the final work package or construction contract are equivalent.

The initiating organization is responsible for ensuring that the entity performing the work abides by all regulations and permit conditions. Failure to do so shall result in the Permittee being subject to appropriate enforcement action by the Department. Any penalties incurred by the Permittee (NASA) by a Contractor's actions or lack thereof shall result in the penalties being deferred to the Contractor.

A letter of clearance must be issued by the Department prior to placement of the project into service for any purpose other than testing for leaks or testing equipment operation. To obtain the clearance letter, the engineer-of-record must submit to the initiating organization two signed and sealed sets of FDEP From 62-604.300(8)(b),F.A.C., "Request For Approval To Place A Domestic Wastewater Collection/Transmission System Into Operation".

The initiating organization shall forward the required information for the clearance request to the NASA EPB. The NASA EPB is responsible for reviewing this submittal and forwarding it to the Department.

The Department shall review the clearance request and shall approve or deny the clearance within 10 business days after Department receipt of Form 62-604.300(8)(b) for a general permit, or within 30 business days for an individual permit. If not satisfied with the clearance request, the Department shall email a request for additional information to the NASA EPB.

NASA EPB shall forward the request to the initiating organization that shall correct any deficiencies or omissions and resubmit the clearance request through the NASA EPB to the Department.

If satisfied with the clearance request, the Department shall email the “Letter of Clearance” to the NASA EPB. NASA EPB shall forward the Notification to the initiating organization.

CHAPTER 13. INDUSTRIAL WASTEWATER

13.1 About the Program

While Florida is not thought by many to be heavily industrialized, wastes from industries have contributed to water quality problems throughout the state. Industrial wastewater discharges are highly variable in the amount and types of pollutants they contain. Pollution from industry includes the "traditional" pollutants such as BOD (biochemical oxygen demand, a pollutant that contributes to the depletion of oxygen in receiving waters), suspended solids, and nutrients (nitrogen and phosphorus, chemicals that act as fertilizers in receiving waters and contribute to algae blooms and other nuisance plant growth). However, industrial waste can also include heavy metals, pesticides, oils and greases, and many toxic organic and inorganic chemicals.

Many industrial water quality problems in Florida are attributable to large volume discharges into small streams that may have limited ability to assimilate the wastes. These industries are being required to significantly improve the quality of their discharges, to consider alternative methods of disposal such as spray irrigation, and are being encouraged to consider and implement reuse to reduce the volume of their discharge. The State of Florida has delegated the Florida Department of Environmental Protection to promulgate regulations and administer programs for the enforcement of the State and Federal laws concerning the disposal of industrial wastewater. In addition, FDEP is now authorized by the Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) program. The Department Industrial Wastewater Section is responsible for issuing all permits that authorize the discharge of wastewaters to the land or to waters of the state.

Due to the variability of waste streams, industrial waste treatment requirements must be developed on a case-by-case or industry-by-industry basis rather than under a uniform treatment standard such as the minimum secondary treatment requirement for domestic wastewater facilities. Most industrial wastewater discharges are regulated by specific federal requirements at a minimum. However, if additional treatment is necessary to protect Florida's water quality standards the industries must provide it.

13.2 When do I need a Permit?

All discharges, including potable water, from industrial activities, must be evaluated and/or listed on the Kennedy Industrial Wastewater Inventory (KIWI). The KIWI places industrial discharges into one of five categories shown in the table below.

Classification	KSC Action	Regulatory Requirement
Class A	No Inventory	Request De Minimus Exemption
Class B	Inventory	Request De Minimus Exemption
Class C	Inventory w/ Extended Data	Request De Minimus Exemption
Class D	Inventory	Permit Application
Class E	Inventory	Request De Minimus Exemption

To be placed on the KIWI, the organization requesting permission to discharge must submit a narrative description to the NASA EPB describing the operation in full detail. This narrative shall be provided to FDEP for them to make a determination on disposal options. The narrative must be written in terms that someone unfamiliar with KSC or NASA language or procedures would understand. The narrative should contain, at a minimum: a detailed description of the operation, volumes of water to be discharged, frequency of discharge, any chemicals or detergents used, the mixing or application rate of those chemicals or detergents, the location of the activity, the location of the discharge point including the location of any ditches, ponds, or other surface waters. Once the submittal is received and evaluated by FDEP, they shall notify the NASA EPB of their determination.

13.3 Industrial Wastewater Discharge Authorization

The JBOSC is responsible for maintaining the domestic wastewater treatment systems at KSC. Some industrial wastewaters are permitted to be discharged to the sanitary sewer system provided they have been approved.

Discharges into the JBOSC maintained domestic wastewater treatment systems shall comply with CFR 403.6, National pretreatment standards, as well as 40 CFR Chapter 1, subchapter N for pretreatment limits for specific industrial sub-categories.

Waste stream discharges into the wastewater treatment system must be characterized by the waste stream generator and approved by JBOSC Maintenance Engineering prior to discharge into the JBOSC maintained Domestic Wastewater Treatment Systems. The producer of the waste stream must gather all necessary waste stream data and have the waste stream characterized. Upon completion of characterization, the waste stream generator must submit a Process Waste Questionnaire (PWQ) to the JBOSC Waste Management Group. The Waste Management group shall evaluate the PWQ and if identified as a Domestic Wastewater discharge candidate, a JBOSC Industrial Wastewater Discharge Request and Authorization Form shall be submitted for the requester. Upon final determination of the waste stream, a Technical Response Package (TRP) shall be issued to the requester with instructions on how to manage the waste stream prior to and for disposal. Industrial wastewater generators whose waste is approved for discharge to the Domestic Wastewater collection system as part of the TRP shall get specific requirements on who to contact and how to discharge the waste stream.

13.4 Enforcement

Enforcement actions for illegal discharges to the Domestic Wastewater Treatment System are described in the Chapter 12, Domestic Wastewater.

Illegal discharges to grade or to surface waters shall cease immediately and appropriate actions shall be taken by NASA EPB. This includes notifying the regulatory agencies and investigating the cause of such releases.

13.5 Construction or Modification Industrial Wastewater Treatment Systems

The NASA EPB shall be included in the review process and consulted for input and regulatory guidance during the planning and design phases of the project.

All correspondence with regulatory agencies regarding KSC is to originate from the NASA EPB. All NASA and contractor organizations (including design, construction, environmental, or O&M organizations) shall process all notifications, permit applications, requests for approval, compliance monitoring, reports, requests for clearance, and any other submittal, including email, to a regulatory agency through the NASA EPB.

13.6 Permitting Process

The initiating organization is responsible for preparing the permit application and all supporting documentation and drawings, including signing and sealing by a Professional Engineer (P.E.), when required. The initiating organization is responsible for obtaining the signatures of all system operational authorities as indicated on the permit application. The initiating organization is responsible for submitting the completed permit application package to the NASA EPB for review.

The NASA EPB is responsible for reviewing all application submittals. If incomplete, the permit application shall be returned to the initiating organization for correction. If complete, the NASA Responsible Authority shall sign the application as the Permittee and the application shall be sent by certified mail to the Department.

If not satisfied with the permit application, the Department shall disapprove the use of the General Permit and the permit application must be revised to correct any deficiencies or omissions and be resubmitted through the NASA EPB to the Department.

If satisfied with the permit application, the Department shall email a “Notification of Use of General Permit” to the NASA EPB. NASA EPB shall forward the Notification to the initiating organization.

The initiating organization is responsible for ensuring that the design information submitted to the Department in the permit application and the design information in the final work package or construction contract are equivalent.

The initiating organization is responsible for ensuring that the entity performing the work abides by all conditions in Chapter 62-4, 62-550, 62-555, the general requirements for general permits, and Rule 62-555.405, F.A.C.

A letter of clearance must be issued by the Department prior to placement of the project into service. Failure to do so shall result in the Permittee being subject to appropriate enforcement action by the Department. Any penalties incurred by the Permittee (NASA) by a Contractor’s actions or lack thereof shall result in the penalties being deferred to the Contractor.

To obtain the clearance letter, the engineer-of-record must submit to the initiating organization one set of record drawings and a "Notification of Completion of Construction for Wastewater Facilities or Activities" [the Department From 62-620.910(12),F.A.C.]. The initiating organization will forward the required information for the clearance request to the NASA Environmental Program Branch (TA-C3). The NASA Environmental Program Branch (TA-C3) is responsible for reviewing this submittal and forwarding it to the Department.

The initiating organization shall forward the required information for the clearance request to the NASA EPB. The NASA EPB is responsible for reviewing this submittal and forwarding it to the Department.

The Department shall review the clearance request and shall respond within 14 days.

If not satisfied with the clearance request, the Department shall email a request for additional information to the NASA EPB.

NASA EPB shall forward the request to the initiating organization that shall correct any deficiencies or omissions and resubmit the clearance request through the NASA EPB to the Department.

If satisfied with the clearance request, the Department shall email the "Letter of Clearance" to the NASA EPB. NASA EPB shall forward the Notification to the initiating organization.

13.7 Monitoring

These reports are the responsibility of the environmental office of the operation or maintenance group charged with taking care of the system. These reports are submitted to FDEP through the EPB. General and specific conditions listed in a permit gives instruction on required monitoring for the permitted system. The EPB Sampling Contractor or designated representative performs all permit-related sampling and analysis. Monitoring results are transferred to appropriate forms and transmitted to the operator. The lead environmental office is responsible for reviewing the data provided by the Environmental sampling contractor or operational personnel to ensure no transcription errors have occurred. The lead environmental office is also responsible for listing items of noncompliance and when possible explaining the reason for noncompliance. If the reason for noncompliance is unknown, this should be stated and the lead organization should consult with the EPB to determine if an investigation or further sampling is required.

13.8 Violations of Permit Conditions

The lead environmental office is responsible for ensuring procedures have been developed to ensure compliance with permit requirements within their organization. The lead environmental office is responsible for reporting apparent permit violations to the EPB. The EPB is responsible for reporting apparent permit violations to the appropriate State or Federal agencies and negotiating compliance requirements in cooperation with the lead organization.

13.9 Reports

All required reports of monitoring results would be submitted to regulatory agencies through the EPB. The lead environmental office must make certain the required reports with applicable signatures are submitted to the EPB in sufficient time (usually five working days prior to submittal) to ensure the reports reach the agencies in the time period listed in the applicable permit or regulation. The EPB shall review the submittal to ensure all required data and all signatures are present before transmittal to regulatory agencies. The lead environmental office shall be notified of any deficiencies and is responsible for correcting deficiencies. Copies of the monitoring data transmitted to the regulatory agency are kept by the EPB. A copy of the dated transmittal letter shall be provided to the lead organization. The EPB shall track permits requiring monitoring submittals and track dates that the reports were submitted. The EPB shall notify the lead environmental office when reports are overdue. The EPB shall be the listed point of contact for all monitoring report submittals and shall coordinate inquiries from regulatory agencies concerning monitoring data.

CHAPTER 14. HAZARDOUS AND CONTROLLED WASTE

14.1 Hazardous Waste Management (HWM)

At KSC, the NASA EPB is responsible for implementation of a Hazardous, Controlled, and Solid Waste Management Program. Each waste generator at KSC is responsible for developing general and specific waste management procedures for their operations. This includes training, accumulation, storage, and contingency plan requirements for hazardous, controlled, and solid waste, and industrial and domestic wastewaters. To ensure compliance with Federal and State regulatory requirements the NASA EPB utilizes a center wide methodology to assist in the evaluation, identification and disposal of waste streams generated on KSC by disposing all waste streams through the JBOSC. The hazardous waste management process has been reviewed and approved by the Florida Department of Environmental Protection (FDEP).

14.2 Environmental Program Branch (EPB)

The NASA EPB is the single conduit for interaction between KSC organizations and outside regulatory agencies. The EPB is responsible for all notifications to regulatory agencies concerning RCRA compliance at KSC and NASA-operated facilities on CCAFS and PAFB.

14.3 NASA EPB Responsibilities

The NASA EPB is responsible for implementation of an internal Hazardous Waste Inspection Program. The EPB shall inspect all hazardous waste storage areas, including the TSDF, satellite sites, storage tanks, and 90-day areas at least annually. When compliance concerns are identified, the operational organization shall be responsible for developing and implementing appropriate corrective action. The inspection process includes review of the waste management location and required records to be maintained by the waste generator.

14.4 The Resource Conservation and Recovery Act (RCRA)

RCRA provides cradle-to-grave control of hazardous and solid waste by establishing management requirements for generators and transporters of hazardous waste, which includes owners and operators of hazardous waste Treatment, Storage, and Disposal Facilities (TSDF). In Florida, the EPA has delegated the FDEP authority to implement most of the waste management requirements established under RCRA. Rules developed by the State are found in the Florida Administrative Code (FAC).

14.5 Waste Characterization

All organizations generating wastes on KSC are responsible for the proper handling, storage and final disposal of their own waste streams. To ensure compliance with Federal and State regulatory requirements the NASA EPB utilizes a center wide methodology to assist in the evaluation, identification and disposal of waste streams generated on KSC. As part of the JBOSC, JBOSC Waste Management provides assistance to waste generators on the proper handling, storage and disposal of all waste streams generated through processes funded by NASA. Organizations can obtain this

guidance through the submittal of a Process Waste Questionnaire (PWQ) (KSC form 26-551) directly to SGS waste management office. The evaluation process is administered at KSC specific to each waste generating organization. Every effort should be made to ensure that PWQs are submitted prior to actual waste generation allowing 30 days for completion of the evaluation process. This forethought and planning are conducive to waste minimization efforts and ensures the materials will be properly managed upon generation and initial accumulation. In those instances when waste properties cannot be projected prior to generation, the containers must be labeled “Hazardous Waste Determination in Progress” (KSC form 29-759) pending completion of the waste evaluation process. Upon completion of the PWQ process, the waste generating organization will receive a Technical Response Package (TRP) from SGS Waste Management. The TRP will outline handling, storage and disposal requirements. It then becomes the responsibility of the waste generating organization to ensure compliance of any State, Federal or NASA requirements for waste generated while operating within NASA property. Information about the waste characterization of hazardous and controlled waste is provided in the JBOSC document, EVM-I-0446-16.

14.6 Hazardous Waste Generator Standards

Hazardous wastes are managed according to regulations found in 40 CFR Part 262, Part 265 (by reference), and Chapter 62-730, FAC. Examples of hazardous wastes include ignitable paints, acids, hydrazine spill residues, and spent solvents. In addition to the requirements addressed in Sections 2.4 and 2.5, waste generator standards are provided below for the proper management of hazardous waste.

14.6.1 Hazardous Waste Accumulation and Storage Sites

Individual generation sites at KSC include 90-day accumulation and satellite areas. The waste generating organization must identify the sites to the KSC EPB, TA-C. Notification of new accumulation or storage sites must also be provided to J-BOSC Fire Prevention (867-3072, SGS-186) who will provide guidance regarding fire prevention measures and National Fire Protection Association (NFPA) requirements.

1. 90-day Accumulation Area: Common collection points where wastes are accumulated in containers or tanks. The following requirements apply:
    a. Accumulation Start Date (ASD): For new waste streams, the ASD is the completion date of the hazard determination as recorded by JBOSC Waste Management on the PWQ in Block N. The ASD begins the date hazardous waste is first added to an accumulation container for all succeeding batches of that waste. Variable process wastes that can exhibit hazardous or nonhazardous characteristics must be marked with the Hazardous Waste Determination in Progress (HWDIP) label until chemical analysis is completed. If hazardous, the analysis completion date serves as the ASD. Accumulation management requirements of HWDIP labeled waste are addressed later in this chapter. The hazardous waste label (KSC Form WM6P) provides a space for recording the ASD and must be marked with indelible ink.
    b. Storage and Accumulation Time Limit: Hazardous wastes may be stored or accumulated at a 90-day accumulation area for no more

than 90 days. This applies to waste stored in containers or tanks. Documentation must be kept to show that accumulation tanks are emptied at least once every 90 days. When calculating the 90-day accumulation period the waste generating organization or waste generator will include the day that waste was first introduced into the container (ASD) as day one and add 89 days to this date. The waste generator has the responsibility for requesting pickup of the hazardous waste within the 90-day accumulation time limit. It is recommended that the support request be submitted by the 75th accumulation day to provide scheduling flexibility and to resolve pickup discrepancies, if necessary. If unforeseen temporary or unavoidable circumstances prevent pickup within the 90-day time limit, the waste generating organization must provide a written 30-day extension request to the Florida Department of Environmental Protection (FDEP) through the KSC EPB (TA-C3). This extension request should be made at least five days before the expiration date and should include information on the type of hazardous waste, accumulation start date, and reason for the extension.

c. Marking Requirements: Containers and tanks must be marked with the words "HAZARDOUS WASTE." Hazardous waste label KSC Form WM6P must be used for this purpose. Other labels or markings as indicated on the TRP for the waste stream must also be placed on the container during accumulation and storage. Additional descriptive labels or markings may be placed upon the container during accumulation or storage if removed prior to pickup for disposal.
d. Inspections: Waste generators must inspect 90-day accumulation areas at least weekly for waste releases, availability and condition of safety equipment, structural damage, proper operation of security devices, and deterioration of containers caused by corrosion or other factors.
    i. Specific Inclusions: Inspections must, as a minimum, include the following specific items:
        1) Check that area warning signs are present, unobstructed, and legible.
        2) Check for spillage and signs of physical damage to the containers. Containers must not have severe rust, visible pitting, flaking, or beaded metal. Dents or creases should not be present that compromise the integrity or significantly alter the original shape of the container. Paint shall not be applied to obscure damage.
        3) Check drum bungs and lids for tightness. Drum lids and bungs should be closed when not in use.
        4) Check the label for the accumulation start date and verify that the date is not near the 90-day accumulation limit.
        5) Check for a properly completed hazardous waste label.
        6) Check operability of fire suppression equipment for ignitable and reactive wastes. Verify sources of ignition are absent and No Smoking signs are conspicuous.
        7) Check that incompatible and reactive wastes are segregated by a physical barrier to prevent adverse reaction in the event of a spill or leak.

8) Check proper aisle space for container inspection and unobstructed access in the event of emergencies.
9) Check that communication equipment for emergency instruction and summoning emergency assistance is operable.
10) Check that spill control materials are available.
11) Check operability of safety shower and eyewash, if applicable.
12) Check that the contingency plan is current, posted, and has been provided to Fire, Occupational Health, and Security organizations.

e. Recordkeeping: The waste generator must document the weekly inspections and note actions taken to correct deficiencies. An inspection log or summary must be kept by the waste generator and maintained for at least three years from the inspection date.

2. Satellite Areas: Waste collection areas at or near the point of generation where small quantities of hazardous waste are initially accumulated. The following requirements apply:
   a. Volume Limit: More than one satellite container for each process or waste stream can be stored if the volume does not exceed 55 gallons for each waste stream. For acutely toxic waste streams (EPA waste code with “P” prefix), only one (1) quart rather than 55 gallons may be stored.
   b. Accumulation Start Date (ASD): The ASD shall be marked on the waste container label when the waste container is moved from the satellite accumulation area to a 90-day accumulation area or permitted storage facility. The date a container is moved from the satellite area becomes the ASD for that container.
   c. Storage and Accumulation Time Limitations: The waste container must be moved to a 90-day accumulation area or permitted storage facility within three days once 55 gallons of waste or 1 quart of acutely toxic waste is accumulated.
   d. Management and Control: The container must be under the control of the operator of the process generating the waste. The waste container must be within visual sight of the operator or within fifty feet of the process generating the waste.
   e. Marking Requirements: Containers and tanks must be marked with the words "HAZARDOUS WASTE" on a hazardous waste label (KSC Form WM6P). Other labels and markings as indicated on the TRP for the waste stream must also be placed on the container during accumulation. Additional descriptive labels or markings may be placed upon the container during satellite area accumulation but must be removed prior to pickup for disposal.
   f. Exemption Process: Site-specific exemptions from satellite area requirements may be granted by the KSC EPB on a case-by-case basis.
3. Container and Tank Requirements
   a. Container Requirements: Waste generators accumulating hazardous wastes in containers of 110 gallons or less must comply with the packaging requirements identified in the TRP for that waste stream.

Waste generators must comply with the following container requirements for 90-day accumulation and satellite areas.

i. New or Reconditioned Containers: New, unused containers or reconditioned containers must be used for the accumulation of hazardous waste. Stainless steel drums used only for accumulation and storage of fuel and oxidizer wastes may be reused for the same commodity without rinsing or reconditioning.
ii. UN Specification Performance-Oriented Packaging Standards: Containers must meet UN specification performance-oriented packaging standards unless otherwise authorized in 49 CFR 173. The appropriate standards for each waste stream are included in the TRP. Exceptions to TRP packaging references may be provided by JBOSC Waste Management on a case-by-case basis.
iii. Bulging Containers: Some waste streams may cause a container to bulge. A bulging container shall be placed into an overpack. The outer drum must be marked "SALVAGE DRUM." No absorbent or packing material is required unless leakage has occurred. Wastes that have consistently bulged containers may have overpack requirements specified in the TRP. All overpacks must also be labeled and marked as required for that waste stream by the TRP. As a safety precaution, a notation on the outer container should be made to alert personnel of potential hazards, for example "Bulging Container Inside."
iv. Container Condition: Containers must be kept in good condition and free of rust and corrosion. Deteriorated containers shall be overpacked or have the waste transferred to a new container.
v. Labeling and Marking: Labeling and marking information is given in the TRP. Temporary or incorrect labels ("Empty," "Hazardous Waste Determination In Progress") must be removed when the known status of the waste changes such as upon receipt of the TRP or laboratory analysis, or upon adding waste to a drum.
vi. The following are examples of incorrect labeling:
    1) Striking-out or writing-over any information or entries on hazardous waste labels such as ASD, EPA waste codes, or the DOT proper shipping name.
    2) Covering a preexisting label with a new label. If a label must be changed, the preexisting label must be removed first.
    3) Adding labels or information that conflicts with the labels required by the TRP.
    4) Labels placed anywhere other than the top third of the drum.
    5) Hazard class labels placed farther than six inches from the hazardous waste label.
vii. Empty Containers: Empty containers that are located in satellite and 90-day accumulation areas must display an

"EMPTY" label. Empty containers of oxidizer or fuel rinsate which are returned to the generator for reuse shall have "EMPTY" labels placed over the bung. Labels must be placed on the upper third of the container and be plainly visible when the container is stored. Pallets of containers or large numbers of containers can be labeled as a group if they are secured together.

viii. Emission Controls: Containers storing hazardous waste must be closed at all times except during addition, removal, or transfer of waste material. Funnels, aerosol puncturing devices, and closures (e.g. bungs and lids) will be considered closed if installed hand tight so that the gasket contacts the seat and no waste will spill or leak if the container is tipped. Visual inspections must be performed for holes, gaps, or open spaces that may allow volatile emissions to escape to the atmosphere. Containers may be equipped with safety relief valves that open periodically to relieve excess pressure. Closures will be seated "wrench tight" prior to pickup for disposal.

ix. Fill Limits: Waste containers must not be filled completely and adequate headspace must be provided to prevent seepage or bulging due to expansion. Additionally, certain TRPs include specific fill limits to facilitate handling.

b. Tank Requirements: Regulations for management of tank systems can be found in 40 CFR 265, Subpart J. Wastes accumulated in tanks will be transferred to a vendor tanker truck or transferred to appropriate containers by JBOSC Waste Management for disposal or reclamation. Waste generators who manage hazardous waste in tanks must comply with the following requirements:

i. Tank System Assessment: Waste generating organizations storing hazardous wastes in new or existing tank systems must obtain a written assessment reviewed and certified by an independent qualified, registered professional engineer. The assessment must attest to the tank's structural integrity and acceptability for storing or treating hazardous waste.

ii. Secondary Containment: Tanks accumulating hazardous wastes must be equipped with a secondary containment system according to 40 CFR 265.193.

iii. Inspections: The waste generator must inspect the following items at least once each operating day:
   1) Overfill or spill control equipment.
   2) Possible tank corrosion, secondary containment deterioration, or releases of waste.
   3) Data from monitoring equipment.

   Documentation of these inspections must be maintained by the waste generator and made available when requested.

iv. Labeling and Marking: Tanks containing hazardous waste must be labeled as hazardous waste (KSC Form WMP6).

v. Emission Controls: The following controls must be used to minimize the release of volatile organic emissions according to

40 CFR 265 Subpart CC for those waste streams containing greater than 500 ppm Volatile Organic Constituents. These controls meet requirements for level 1 tank controls as found in Subpart CC:

1) Tank must be equipped with a fixed roof.
2) Each opening in the fixed roof must be equipped with a closure device or vented by a closed vent system to a control device.
3) A pressure-vacuum relief valve may be used to maintain internal pressure within tank specifications and to avoid an unsafe condition. The valve may be vented to the atmosphere but must remain in the closed position when not venting.
4) The maximum organic vapor pressure must be determined for the hazardous waste being accumulated to ensure that the pressure does not exceed the limits specified for tank control level 1.
5) Tank defect repairs subject to Subpart CC must be started within five days of the discovery of the defect and completed within 45 days of discovery.
6) Hazardous waste transfers from one tank to another tank must be performed in a closed system. However, transfer from a tank to a container of 119 gallons or less need not be performed in a closed system.

4. Hazardous Waste Determination in Progress (HWDIP) Labeled Waste: If a hazardous/nonhazardous waste determination cannot be determined by process knowledge the container of waste must be marked with a Hazardous Waste Determination In Progress (HWDIP) label until chemical analysis is completed. If hazardous, the analysis completion date serves as the accumulation start date. Waste streams labeled with HWDIP labels are a potentially hazardous waste stream; therefore must be managed as a hazardous waste. In order to fulfill this requirement, the generator must manage those containers in a satellite accumulation area or 90-day storage area. HWDIP waste generated in amounts less than fifty-five gallons may be managed as a satellite container. If HWDIP waste is generated in amounts greater than fifty-five gallons, the additional volume must be moved within 72 hours to a 90-day storage site.
5. Personnel Training: Personnel with waste management responsibilities must complete a program of classroom instruction and on-the-job training that teaches them how to accomplish their duties to ensure compliance with this handbook and 40 CFR 265.16. This training program must be completed within six months of assignment to waste management responsibilities and before performing unsupervised work. Personnel must also take part in an annual review of this training.
    a. Training Topics: Training programs should include, at a minimum, the following topics:
        i. Emergency procedures.
        ii. Emergency equipment.
        iii. Emergency systems.
        iv. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment.

v. Key parameters for automatic waste feed cutoff systems.
vi. Communications or alarm systems.
vii. Response to fires or explosions.
viii. Shutdown of operations.

b. Recordkeeping: The waste generating organization must ensure that the following documents concerning personnel training are available:
i. Job titles and names of employees filling each job.
ii. Description for each job title that includes hazardous waste management duties.
iii. Description and type of initial and continuous training.
iv. Verification that training has been completed.
v. Records for these items must be maintained on current employees for the duration of their employment until three years after the date they last performed hazardous waste activities.

5. Preparedness and Prevention: The following applies to all 90-day accumulation area locations unless it can be shown that hazards associated with the accumulating waste preclude specific requirements:
a. Required Equipment:
i. Communications and alarm system that can provide immediate instruction (voice or signal) to facility personnel.
ii. Communication device such as a telephone or a two-way radio must be locally available to summon emergency assistance.
iii. Portable fire extinguishers.
iv. Fire control equipment.
v. Spill control equipment.
vi. Decontamination equipment.
vii. Safety shower and eyewash.
viii. Water at adequate volume and pressure to supply water-hose streams, foam producing equipment, automatic sprinklers, or water spray systems.

6. Incompatible Waste Storage: Incompatible wastes stored in the same facility must be separated with a dike, wall, or berm so that incompatible waste will not mix as a result of an unplanned release.

7. Contingency Plans: Waste generators who accumulate hazardous waste at 90-day accumulation areas must have a contingency plan. The plan describes actions to be taken by facility personnel in response to fires, explosions, or releases of hazardous waste or its constituents.
a. General Information:
i. The plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned release of hazardous waste or constituents to the air, soil, or surface water.
ii. The provisions of this plan must be carried out immediately if a release occurs.
iii. An existing emergency or contingency plan may be amended to incorporate hazardous waste management provisions to comply with this requirement.

b. Requirements:
    i. A current list of names, addresses, and phone numbers (office and home) of all persons designated as a facility emergency contact. Where more than one person is listed, one must be named as primary contact and the others must be listed in the order they will assume responsibility as alternates.
    ii. A list of all emergency equipment including a description of each item's capabilities. The list should include fire control equipment, spill control equipment, communication and alarm systems, and decontamination equipment.
    iii. An evacuation plan describing signals for area personnel to begin evacuation, evacuation routes, alternative evacuation routes, and marshaling areas.
    iv. The KSC emergency phone number 911.
    v. A copy of the plan must be posted external to the 90-day accumulation area and in plain view. A copy of the contingency plan must be submitted to JBOSC Fire Services.
c. The plan must be reviewed and amended whenever:
    i. Applicable regulations are revised or instructions are received from the KSC EPB or JBOSC Waste Management.
    ii. The plan fails in an emergency or emergency exercise.
    iii. The facility changes in its design, construction, operation, maintenance, or other circumstance in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or changes the response necessary in an emergency.
    iv. The list of facility emergency contacts is changed.
    v. The list of emergency equipment is changed.

8. Emergency Protocols:
    a. Facility Emergency Response Contact Responsibilities: Whenever there is an imminent or actual emergency the observer, facility emergency contact, or designee must immediately:
        i. Activate internal facility alarm or communication system to notify all facility personnel.
        ii. Activate the "JHB 2000, Consolidated Comprehensive Emergency Plan (CCEMP), by calling 911 if the incident is beyond the capabilities of trained facility personnel to manage or poses an imminent threat to human health or the environment.
    b. Procedures During an Emergency:
        i. The facility emergency contact or waste generator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility.
        ii. Immediately after an emergency, the facility emergency contact or waste generator must take any necessary action to effect proper management of recovered waste, contaminated soil, surface water, or any material that results from a release, fire or explosion.

iii. During emergency response operations activated through the "Emergency Preparedness Plan," the incident commander, hazardous materials response team, and spill cleanup team responding to the incident will assume responsibilities for all decisions relating to the management of the incident and cleanup of spilled hazardous materials. Wastes generated from these emergency response operations will be left onsite to be managed by facility personnel according to the procedures in this handbook.

c. Pollution Incident Reporting: The facility emergency contact or waste generator must comply with the pollution incident notification requirements according to Chapter 6 of this KNPR.

14.7 KSC Aerosol Can Policy

The purpose of this policy is to create consistency across KSC and CCAFS for the management of waste aerosol containers, as well as encourage recycling. The following policy has been developed as a joint partnership between NASA, the Air Force and the FDEP.

14.7.1 General Requirements

1. Waste aerosol cans may be accumulated in step-cans because aerosol cans are closed per definition.
2. Waste aerosol can accumulation containers will be marked with the words "Waste Aerosol Cans Only".
3. Waste aerosol cans generated in the field can be brought to a satellite accumulation area or flammable storage cabinet/locker as described below IF waste aerosol cans are the only waste stream generated by the shop. (Note: This policy is applicable to waste aerosol cans only).

14.7.2 90 Day Sites

1. Accumulate aerosol cans in accordance with all 90-day area storage requirements.
2. Contractors will establish a target waste pickup for day 60.

14.7.3 Satellite Accumulation Areas (SAA)

1. Accumulate aerosol cans in accordance with all SAA accumulation requirements.
2. Accumulation containers will be marked as described in the general requirements.

14.7.4 Flammable Storage Cabinet/Locker

In areas where the accumulation rate is extremely low and aerosol cans are the only hazardous waste stream generated in the area, the flammable storage cabinet/locker may be used to store waste aerosol cans. Accumulation requirements are:

1. Waste aerosol cans will be stored in a metal tote or otherwise physically separated in an area such as a shelf within the flammable storage cabinet/locker.
2. The tote will be marked as described in the general requirements.
3. Air Force generators on CCAFS will transport the cans to the 90-day site accumulation site at Hangar R&D.

NASA and NASA contractor generators will transport the cans to a 90-day site accumulation container or to the Drop Your Chemicals Off Here (DYCOH) site (K7-115) maintained by JBOSC.

14.7.5 Managing Waste from the Hydraulic Aerosol Can Crusher:

Accumulation start date for the liquid residue from the hydraulic can crusher will be managed as a new 90-day accumulation drum.

14.8 Treatment, Storage, and Disposal Facilities (TSDF)

KSC has a permitted TSD facility located within the operational area of KSC. The TSDF provides a temporary storage location of hazardous / controlled wastes generated on KSC. The TSDF permit renewal shall be prepared by the operating organization per FAC requirements .

14.9 Controlled Waste Generator Standards

Controlled wastes include petroleum contaminated soils or debris, certain industrial wastewaters, nonhazardous used oil and oil filters, asbestos-containing material, and PCBs. Controlled wastes shall be evaluated by JBOSC Waste Management through the submittal of a PWQ. The waste generating organization is provided with a TRP with a specific waste process code for management of the waste and direction for disposal support through JBOSC Waste Management. Waste generating organizations should use best management practices for the accumulation and storage of controlled waste. Controlled waste must be accumulated and stored in containers meeting UN specification performance-oriented packaging standards as addressed in the applicable TRP. Site specific exemptions for use of alternate containers, for accumulation purposes only, may be granted by JBOSC Waste Management, through JBOSC Environmental Services, on a case-by-case basis.

14.10 Petroleum Contact Water (PCW)

PCW is wastewater containing a recoverable petroleum product that is not otherwise managed under the Used Oil regulations. PCW is managed according to regulations established in Chapter 62-740.030, FAC. Aboveground PCW storage tanks of greater than 550 gallons and underground PCW storage tanks of greater than 110 gallons must be registered with the FDEP. In addition to requirements found in the TRP the following generator standards apply to the management of PCW:

1. Mark the PCW storage container or tank with the date the PCW accumulation first begins.
2. Keep the container or tank closed and stored in a safe manner.
3. Label or mark the container or tank with the words “Petroleum Contact Water.”

4. Inspect the tank or container weekly for leaks or deterioration and maintain the associated records for three years.
5. Generators must not store PCW for more than 180 days and document compliance by maintaining associated inventory records for three years. This may be accomplished by annotating KSC Form 26-541 with the accumulation start date and maintaining the return copies for three years.

14.11 Universal Waste (UW)

Universal Waste regulations were established by the EPA to ease the requirements for managing hazardous wastes that can be recycled. Items which meet the definition of universal waste can be collected and managed under requirements found in 40 CFR 273 and Chapters 62-730 and 62-737, FAC. Waste streams currently adopted by the State for management as UW are batteries, mercury-containing lamps and devices, and certain pesticides. FDEP has adopted the 40 CFR Part 273 provisions of the Universal Waste Rule under Chapter 62-730.185, FAC. EPA has granted the State authorization to develop guidance for additional waste streams that may be incorporated to the existing universal waste management handling standards.

Universal Waste generators are called handlers and must comply with the following requirements:

1. Handlers must manage UW using the PWQ/TRP process.
2. Handlers must manage UW in a way that prevents releases to the environment. Nonleaking containers in good condition must be used if the UW is damaged or leaking. UWs are not required to be stored in a 90-day accumulation or satellite area, but should be managed in a hazardous waste accumulation area as a best management practice.
3. Handlers must use the KSC Universal Waste Label and may not accumulate universal wastes for more than six months allowing for JBOSC Waste Management to consolidate and arrange for a recycling contractor to pick up the materials.
4. Handlers must clearly show the length of time that the wastes have been accumulated by marking or labeling the container with the earliest date that the waste was generated or received**.**
5. Wastes created from the cleanup of spilled or leaked universal wastes must be managed under the waste identification process according to Section 2.4. All handlers must respond appropriately to releases. Handlers must determine if the residues resulting from releases are hazardous waste and if they are, manage them under the full hazardous waste regulations as instructed in the TRP. Any release not cleaned up constitutes illegal disposal of hazardous waste that may lead to RCRA enforcement actions. The handler must comply with the pollution incident notification requirements according to Chapter 6 of this KNPR.

14.12 Asbestos

Handling asbestos-containing material for disposal requires specialized training and adherence to specific procedures as directed by 29 CFR 1910.1001 and 29 CFR 1926.1101. The removal of asbestos-containing insulation or pulverizing of asbestos-containing floor tiles can cause asbestos fibers to become airborne resulting in serious health risks. Before attempting to remove or handle any suspected asbestos-containing materials, the waste generator or waste generating organization should contact J-BOSC

Environmental Health at 867-2400 for guidance. The Facility Asbestos Management System (FAMS) contains detailed facility asbestos survey data and can be accessed from the JBOSC Internet home page. The waste generator must refer to Section 7.4 of this KNPR for the procedures and notification required for asbestos abatement and removal projects.

The following procedures should be used for the containerization and management of asbestos-containing waste material from miscellaneous sources:

1. Friable asbestos-containing waste material must be wetted and placed in leak-tight, double wrapping before placement in a container such as a 55-gallon steel drum.
2. Nonfriable asbestos-containing waste material, such as floor tiles, may be placed directly into a waste container such as a 55-gallon steel drum. Certain nonfriable asbestos-containing waste materials can release airborne asbestos fibers if the material becomes brittle or is exposed to extreme situations such as demolition or mechanical pulverization. In these cases, nonfriable asbestos-containing waste material should be wetted and double wrapped before placement in containers.
3. Personal Protective Equipment (PPE) and other equipment used in the handling and removal of asbestos must also be managed as asbestos-containing waste material according to guidelines if not decontaminated.
4. Occupational Safety and Health Administration (OSHA) regulations require an asbestos warning label (KSC Form 28-366) on all containers.
5. Waste containers storing asbestos-containing material should be managed in a secure area such as a 90-day accumulation area as a best management practice.
6. Asbestos waste shipment records must be maintained by the waste generator for at least two years.

14.13 Used Oil

Any lubricant that has been refined from crude oil (or synthetic oil) that has been "used," and as a result of such use is contaminated by physical or chemical impurities. Used oil is managed according to regulations established in 40 CFR 279 and Chapter 62-710, FAC. The following waste generator standards apply to the management of used oil:

1. Used oil containers, tanks, and associated piping must be marked “Used Oil.”
2. Used oil containers, tanks, and associated piping must be in good condition with no severe rusting, structural defects, deterioration, or leaks.
3. Used oil containers must be kept in secondary containment.
4. Containers storing used oil must be sealed or otherwise protected from the weather and stored on an oil-impermeable surface such as polyethylene sheeting, rigid plastic secondary containment, or epoxy-coated concrete.
5. Aboveground used oil storage tanks of greater than 550 gallons and underground used oil storage tanks of greater than 110 gallons must be registered with the FDEP. Used oil waste generators must refer to Chapter 18 of this KNPR for used oil tank registration requirements.
6. If a used oil spill occurs, the waste generator must perform the following cleanup steps:
    a. Stop the release.
    b. Contain the released oil.
    c. Clean up the spill using appropriate absorbents and manage appropriately.
    d. Contact the J-BOSC Duty Office (861-5050) for nonemergency support if cleanup is beyond the capability of facility personnel.

e. Dial 911 to activate the JHB 2000, "Consolidated Comprehensive Emergency Plan (CCEMP)." if the spill poses an imminent threat to human health or the environment.
f. Pollution incident notification must be made by the waste generating organization according to Chapter 5 of this KNPR.

14.14 Used Oil Filters

Used oil filters are collected and managed as controlled wastes before recycling according to regulations established in Chapter 62-710.850, FAC. The following procedures must be used for the management of used oil filters:

1. Only non-terneplate filters should be managed according to these guidelines. Terneplated filters contain a lead and tin alloy that may be required to be managed as a hazardous waste.
2. Used oil filters should be hot-drained of residual oil. The oil should be collected and managed as a controlled waste.
3. Used oil filters should be crushed, if possible, to reduce volume.
4. Containers storing used oil filters must be sealed or otherwise protected from the weather and stored on an oil-impermeable surface such as polyethylene sheeting, rigid plastic secondary containment, or epoxy-coated concrete.
5. Containers must be labeled “Used Oil Filters.”

14.15 Orangeburg Material Policy

Orangeburg material, which is a combination of coal tar and creosote, has been found in ductwork at KSC. The material has been sampled and found to contain semi-volatile organic compounds in concentrations that may pose health concerns and that are regulated by State and Federal environmental agencies.

The primary hazard posed by this material is the debris that is created through cleaning or upgrade work in ducts containing Orangeburg material. This debris then contaminates water in the manholes which then creates worker safety concerns and is subject to State and Federal regulations. KSC’s policy is intended to prevent disturbance of this material so as to prevent any accumulation of debris in manholes and/or conduits. In those cases, where there cannot be accomplished this section sets out requirements for handling dewatering effluent and debris, as well as recommendations for personal protective equipment.

All Project Managers whose work involves potential contact with Orangeburg ductwork material and/or debris must ensure that appropriate personal protective equipment (PPE) is identified and used. In general, PPE for this type of work includes chemical eye goggles, butyl rubber gloves, and full body impermeable clothing such as Tyvek or similar material. Proper field sanitation should be available in the form of washing and sanitation facilities, in case of contact with the material.

When working at any KSC site with Orangeburg material present you must:

1. Take action prior to disturbing the Orangeburg material to prevent any accumulation of solid debris at the worksite (i.e. ground cover for cleanout equipment, a capture mechanism in the manhole, etc.). Any solid material that is accumulated from this or

any similar activities must be containerized and disposed of this KNPR (i.e. project manager must request a Process Waste Questionnaire).

2. Clean out visible solid debris that has accumulated in manholes/conduits known to contain Orangeburg material. Effluent from any dewatering activity required to clean out the debris must be containerized and disposed of per JBOSC Waste Management's instructions. A filter mechanism on the discharge line would help capture any debris associated with duct cleanout. Any solid material accumulated during the cleanout must be containerized and disposed of per this KNPR (i.e. project manager must request a Process Waste Questionnaire).

Ensure that a project manager or construction inspector visually inspects that no solid Orangeburg debris is in the manhole before discharging dewatering effluent to grade. For work at sites where Orangeburg material has not been disturbed and there is no visible Orangeburg debris, dewatering effluent may be discharged to grade.

14.16 Abandoned Waste

All appropriate personnel must be aware of the requirement for management of abandoned waste at KSC. Upon discovery of an abandoned waste, the organization whose facility the waste was abandoned at will assume the lead for the appropriate disposition of that waste. Every effort will be made by the affected organizations, the JBOSC Waste Management Office, and the KSC Environmental Program Branch (EPB) to determine the generator of the abandoned waste. The generator, if found, will assume the immediate lead for the appropriate disposition of the material. Waste abandoned away from facilities in isolated locations will be considered a pollution incident and reported to the KSC EPB who will initiate an incident investigation.

14.17 Waste Minimization Program

KSC must reduce the volume and toxicity of hazardous wastes to the extent economically practicable. All personnel will adopt this practice in day-to-day operations and are encouraged to introduce new ideas concerning waste minimization opportunities to management. The *KSC Pollution Prevention Plan* provides policy for waste minimization as required by section 3002(b) of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 and section 6602(b) of the Pollution Prevention Act.

CHAPTER 15. LANDFILL

15.1 Florida Administrative Code (FAC) 62-701

Operation and closure of solid waste landfill facilities in Florida are regulated by Florida Administrative Code (FAC) 62-701. These regulations cover proper placement of material in landfill cells, monitoring requirements, and recordkeeping requirements. KSC has two unlined landfills that are permitted by the FDEP. The permits cover an operational Class III and a Closed Class III Landfill on Schwartz Road.

15.2 Requirements

At KSC, the EPB implements requirements associated with the management of the landfills. Refer to the KSC Landfill Operations Plan for general, and specific solid waste management procedures. The KSC Landfill Operations Plan is maintained by the JBOSC contractor.

15.3 Inspection

The EPB is responsible for implementing an inspection program to monitor the landfills for compliance with FAC 62-701 and specific conditions of the permits. The EPB is responsible for all notifications to regulatory agencies for matters concerning landfill compliance at KSC. The EPB shall inspect the landfills on a routine basis to assess compliance with applicable regulations and permit conditions. Any non-compliant conditions shall be corrected by the operational organization. An official letter of inspection findings shall be forwarded to the responsible organization.

15.4 Sampling

The EPB Environmental Sampling Contractor shall be responsible for permit-required groundwater, surface water, and gas monitoring at the landfills. All samples shall be analyzed by a State-certified laboratory and records shall be compiled and maintained by the contractor for EPB.

15.5 Non-friable Asbestos Disposal at KSC Landfill

The KSC/Schwartz Road Class III landfill will accept non-friable Asbestos on a case by case basis. NASA policy allows for the disposal of non-regulated asbestos containing materials (NRACM) only. Approval for disposal of NRACM asbestos waste at the KSC/Schwartz Road Landfill will be evaluated by the NASA EPB and will be based on the overall cost savings to that particular project. To submit an application to dispose of non-friable asbestos please complete the NASA – KSC/SCHWARTZ Road Landfill non-friable asbestos form (KSC Form 28-1084 NS). Upon completion please mail this form to NASA EPB.

Once written approval from the NASA EPB Chief has been obtained, the following scheduling procedures are to be followed prior to the acceptance of NRACM wastes at the landfill:

1. Once approved by the NASA EPB, the waste generator/hauler must make arrangements with the landfill operator a minimum of 24 hours before disposal of NRACM waste and inform the operator of the quantity of the waste and the scheduled date the shipment will arrive at the landfill.
2. NRACM will be accepted at the landfill with prior arrangement with the scale house attendant (minimum of 24 hours notification) from Monday through Friday during regular landfill hours but will not be accepted later than 1400 hours.
3. The physical dimensions of the waste shall be within the handling capabilities of the landfill disposal equipment. The landfill staff will discuss these specifications with the generator on a case-by-case basis during scheduling.

If disposal of the NRACM waste in the KSC/Schwartz Road Landfill is not approved, it is the responsibility of the generator to find an appropriate offsite disposal site.

15.6 PCB Bulk Product Waste Disposal at KSC Landfill

The KSC/Schwartz Road Class III landfill accepts PCB Bulk Product Waste for disposal. PCB Bulk Product Waste is defined in 40 CFR 761.3 as waste derived from manufactured products containing PCBs in a non-liquid state at any concentration, where the concentration of PCBs at the time of designation for disposal is ≥50 parts per million (PPM). If the concentration of PCBs at the time of designation for disposal is ≤50 PPM, the waste is not considered PCB Bulk Product Waste. Since the residential Soil Cleanup Target Level (SCTL) value for PCBs is 0.5 milligrams per kilograms (mg/Kg, also referred to as PPM), there is a potential for waste containing PCBs ≤50 PPM to adversely impact the environment if not managed and disposed of properly. Therefore, this waste must be managed and disposed of in a manner to minimize the potential to adversely impact the environment. As a result, the KSC Environmental Program Office encourages all organizations generating waste containing PCBs ≤50 PPM to recycle this material when possible. If these materials cannot be recycled, they should be disposed of in the same manner as PCB Bulk Product Waste.

Prior to disposal of PCB Bulk Product Waste at the KSC/Schwartz Road Landfill a completed PCB Bulk Product Waste Notification Form (KSC Form 28-1085 NS) will be submitted to the landfill operator via facsimile at 861-6114. This notification form shall be submitted a minimum of 24 hours prior to disposal and shall contain the appropriate information called for in the form. A copy of the notification form shall be stored at the scale house for reference by the scale house attendant.

15.7 Records

Records required by FAC 62-701 and permit-specific conditions shall be inspected on a routine basis. Records of daily operations, maintenance, load checking, and training shall be maintained by the operational organization and provided to EPB for transmittal to the FDEP in accordance with permit conditions.

CHAPTER 16. BIOMEDICAL WASTE

16.1 Requirements

Requirements for management of biomedical waste are given in Title 29 Code of Federal Regulations (CFR) Part 1910.1030 and in FAC 64E-16. These rules cover monitoring of sanitary practices relating to the management of biomedical wastes.

16.2 Implementation

At KSC, the EPB is responsible for implementing a program to manage controlled waste including biomedical waste.

16.3 Monitoring

The EPB monitors medical and laboratory experiment processing operations that generate biomedical waste streams to assure KSC is in compliance with the regulations.

16.4 Inspection

EPB shall inspect on a routine basis and monitor for continuing compliance with federal and state regulations. Where noncompliance exists, the responsible organization for the non-compliant activity shall correct all discrepancies.

16.5 Biomedical Waste Generator Requirements

Biomedical wastes include blood products, body fluids, body parts, nonliquid tissues from humans, primates, veterinary waste, and discarded sharps that may present a threat of infection to humans. Biomedical waste is managed according to regulations established in Chapter 64E-16, FAC. The following requirements apply:

1. Biomedical waste mixed with a hazardous waste will be managed as hazardous waste.
2. Biomedical waste mixed with radioactive waste must be managed as radioactive waste and according to KHB 1860.1 “KSC Ionizing Radiation Protection Program.”
3. Biomedical waste mixed with a solid waste that is not hazardous waste or radioactive will be managed as biomedical waste.
4. Discarded sharps will be segregated from other wastes. Accumulation and disposal of sharps will be in a rigid, leak and puncture resistant container designed for the containment of sharps, clearly labeled with the phrase and international biological hazard symbol as described Chapter 64E-16.004(2)(a), FAC and manufactured with dyes meeting the requirements for the incidental metals as described in Chapter 64-E16.004(3)(b)1.b., FAC.
5. Onsite storage of biomedical waste will be in designated areas away from general traffic flow patterns and accessible only to authorized personnel.
6. Storage of biomedical waste will not exceed 30 days of accumulation from the time that the first item is placed into the biomedical waste container or when a sharps container is full.
7. Biomedical waste bags or containers must be marked with the accumulation start date and sharps containers must be marked with the date when the container is full. No KSC label is required for this purpose.

8. All containers when filled or before reaching the 30-day storage limit, will be tightly sealed. Biomedical waste may not be compacted or mechanically stressed in a way that compromises the integrity of the container.
9. Biomedical waste storage areas will be constructed of smooth, easily cleanable materials that are impervious to liquids. The area will be free of vermin and insects. Outdoor storage areas will be conspicuously marked with the international biological hazard symbol and be secured against vandalism.
10. Biomedical waste generators will maintain on file a bag quality test report required by 64E-16.004(C), FAC.
11. The biomedical waste generator will maintain a log of amounts of biomedical waste produced and maintain all biomedical waste management records for three years.
12. Each person handling biomedical waste or having a reasonable risk of exposure to infectious materials will participate in a training program for blood borne pathogens as defined by the Occupational Safety and Health Administration, 29 CFR 1910.1030.

16.6 Training

Training for biomedical waste generators shall be provided by the operational organization. Training for biomedical waste generators must include bloodborne pathogens training.

16.7 Records

Records required by FAC 64E-16 shall be maintained by the contractor and monitored by the EPB on a routine basis. Records of interest include, but not limited to, autoclave logbooks, contingency plans, waste shipping manifests, training, operation plan and the biomedical waste bag report.

CHAPTER 17. BLOODBORNE PATHOGENS/EXPOSURE CONTROL

17.1 Requirements

The Occupational Safety and Health Administration (OSHA) requires employers with employees who could possibly come in contact with blood or potentially infectious materials to have an Exposure Control Program for awareness and training. This is regulated by Title 29 CFR (Part 1910.1030). Examples of positions at KSC covered by an Exposure Control Program are all Medical Personnel, Emergency Response Crews, Payload Engineers and Processors, Stow and De-stow Crews, Lab Technicians, Housekeeping and Groundskeepers. The EPB shall provide guidance and direction on meeting these requirements.

17.2 Implementation

At KSC, the Aerospace Medicine and Occupational Health Branch establishes requirements for the Blood borne Pathogen and Exposure Control Programs. Refer to KSC-UG-1904, as revised for the NASA Blood borne Pathogen Program Plan. The EPB is responsible for implementing an inspection program to evaluate compliance with applicable federal and state regulations. The EPB shall inspect these programs on an annual basis. Where noncompliance exists, the responsible organization shall correct all discrepancies.

17.3 Exposure Control Plans

Regulations require that a written Exposure Control Plan be established by each affected employer. The plan must be reviewed on an annual basis by the Contractor.

17.4 Training

Training must be provided to employees and training records must be maintained for a minimum of three years. The EPB shall inspect these records on an annual basis.

CHAPTER 18. STORAGE TANKS

18.1 Regulatory Relationships

The provisions of 40 CFR 280 govern design and maintenance requirements for underground storage tanks. There are currently no federal regulations covering aboveground storage tanks, except that 40 CFR 112 requires Spill Prevention, Control and Countermeasures (SPCC) plans for all oil storage tank facilities. Underground and aboveground storage tank registration and regulation are covered in Florida under FAC 62-762. As provided for in the FAC, the FDEP has contracted with Brevard County Office of Natural Resources Management to administer the Storage Tank Program in Brevard County. County representatives oversee all tank activities at KSC including registration, closure, and annual compliance inspections.

18.2 Documentation and Registration

Facility managers are responsible for providing an accurate listing of all storage tank systems at their sites, including underground, aboveground, out-of-service and unmaintained tanks. The tanks shall be identified to the EPB through the respective OR. The complete listing of tank systems at all NASA facilities both at KSC and CCAFS shall be maintained by the EPB.

Requirements for registration of storage tanks with the FDEP are listed in FAC 62-762 for Storage Tank Systems. Types of systems exempt from the registration and compliance requirements based on contents or use of the contents are also listed in the FAC. However, the exemptions can be repealed by the legislature at any time after adequate public notice has been given. Therefore, all tanks should be identified to the EPB, even if a current exemption exists.

All aboveground, underground, out-of-service, and unmaintained tanks so identified shall be registered with the Brevard County Office of Natural Resources Management. The current FDEP tank registration forms shall be used. The EPB shall be responsible for filing the registration and maintaining records of all registered tanks. The OR shall be provided with copies of tank registrations for dissemination to applicable organizations. The Chief of the EPB shall be listed as the owner of all tank systems on NASA property and shall sign registration forms. All tanks shall be registered under the KSC Property Office Facility Number for the tank.

Facility managers shall be responsible for informing the EPB through their respective OR of any change in the status of a tank system so registration and listings of tanks can be updated and FDEP notified, if required. Registration updates are required for change in status including, but not limited to, changing the contents of a tank system, changing the end use of the contents of a tank system, placing the tank out-of-service, or abandoning the tank as an unmaintained tank.

The EPB shall make the required notifications, as required by FDEP, with input from the OR.

18.3 Financial Responsibility

As a federal facility, KSC is exempt from the requirement to show proof of financial ability to pay for facility cleanup in the event of a discharge. However, KSC is still responsible for the cleanup of any discharge on NASA property.

18.4 New Storage Tank Installations and Upgrades to Existing Tank Systems

The requirement for a tank system installation or modification at a facility is identified during completion of the Environmental Checklist through the respective OR. All new tank systems must meet requirements in FAC 762 and as outlined in the REC.

18.5 Closures

Disposal of sludge must be in accordance with the PWQ/TRP guidance. Sampling associated with tank closure shall be coordinated with the EPB. Before permanent closure, the tank site must be examined to determine if a release has occurred, and samples must be taken where contamination is most likely to be present. Requirements for sampling and reporting per FAC and the FDEP Pollutant Storage Tank Closure Assessment shall be followed.

18.6 Inspection, Monitoring, Testing and Reports

The FDEP has delegated the responsibility for inspection of storage tanks to the Brevard County Office of Natural Resources Management. The County Office shall inspect at least annually all aboveground and underground storage tanks registered by NASA. OR's shall be notified in advance of the inspection. All records required by FAC should be available for inspection. Records required for inspections include those listed in the recordkeeping section. In addition, all keys to dispensers at vehicular fuel facilities must be available for the inspection. The inspection shall be supported by the EPB. The OR or designated representative responsible for the permitted facility being inspected should also be present. Following the inspection, the County Inspector shall issue a report noting violations found. The recipient of the report shall be the EPB. All remedies to violations shall be coordinated through the EPB and the OR, and the EPB shall answer all violations with either a solution that has already been implemented or with a schedule for remedying the violation. Additional internal inspections for compliance shall be conducted by EPB throughout the year and shall be supported by the OR or designated representative.

Monitoring requirements for tank systems are listed in FAC 62-762. The person performing the monitoring should maintain records of all monitoring activities. At KSC, monitoring wells are in place around some fuel tanks to be used as a method of release detection. The wells are sampled monthly by the Environmental Sampling Contractor. If a sheen layer is noted in water removed from the monitoring wells, the occurrence must be reported to the EPB so the proper agencies can be notified. Further sampling may be required at the discretion of the EPB. Any leakage shall be reported to the EPB on a Pollution Incident Report Form (KSC Form 21-555). Follow-up monitoring of the site to determine the extent of contamination shall be arranged by memo through the EPB.

The secondary containment for AST's should be checked for leakage, and the surface of the tank should be examined for peeling paint, corrosion and leakage. Valves on secondary containment should be kept in a closed position, preferably locked with a keyed padlock with the facility manager responsible for the key. Before any operations involving the tanks, the closed position of the valve should be ensured so the possibility of any spills spreading outside the containment is avoided. Rainwater collected in the secondary containment should be detained until the condition of the water can be determined. Water in the containment must be inspected for the presence of free product, odor or sheen.

If any contamination is detected or should there be reason to believe that the product was introduced to the containment system, the entire contents of the containment system are to be removed (not released) and treated as an industrial wastewater. Following a visual inspection for free product, and based on the knowledge that there was no event or occurrence to indicate that product was introduced to the containment system, the discharge valve may be opened and the contained stormwater released to the stormwater retention system. The flow should not be directed to surface waters. A retention area near the tank location should be used to receive the water and allow it to flow to groundwater. Retention areas must be designed per stormwater regulation 4OC-42 and KSC Best Management Practices.

18.7 Discharge Notifications

Any spill, overfill or other discharge of a regulated substance from a storage tank system at KSC shall be reported per requirements in Chapter 5 of this KHB.

18.8 Recordkeeping

All facility managers shall be responsible for maintaining records as required by FAC for tanks. Records required include but are not limited to:

1) Daily measurements and reconciliation of inventory for vehicular fuel tanks.
2) Results of examination of monitor wells and other release detection systems.
3) Dates of upgrading or replacement of existing storage tank systems.
4) Results of maintenance examinations on storage tank systems.
5) Results of all tightness tests of storage tank systems and results of tests on integral piping.
6) Descriptions and dates of all repairs.
7) Release detection equipment performance claims.
8) The inspection log for AST's includes at least the date of the inspection, condition of the tank, condition of the containment, date stormwater removed from secondary containment, and any problems found and when corrected.

All records must be maintained for two years and must be available for inspection during KSC's internal inspections and the annual County inspection.

CHAPTER 19. PESTICIDES

19.1 Documentation

a. Under Federal Insecticide Fungicide Rodenticide Act (FIFRA), before individuals or companies can market or sell a new pesticide in the United States, studies must be performed to demonstrate the product can be used safely and effectively. Pesticides already registered must be characterized to determine if they can be used safely and re-registered. If new information becomes available after a pesticide is registered, which shows the material does not perform as intended or causes adverse effects, the registration can be suspended, canceled, or the material reclassified.
b. FIFRA requires the Government to pay producers, distributors and other holders of the product compensation for the economic loss associated with suspension and cancellation.
c. Registration
All products labeled as pesticides must be registered. The producer must submit an application to the EPA giving the product name and information concerning product formulation and studies showing performance and safety data. If at any time after the registration of a pesticide the registrant has additional factual information regarding unreasonable adverse effects on the environment by the pesticide, the information shall be submitted to the EPA. The EPA shall consider information and rule on the disposition of the pesticide material. In Florida, registration is handled by the Department of Agriculture and Consumer Services. This body requires data supplied adequately address Florida-specific concerns before the material is registered in Florida.

19.2 Controls

a. Labeling
(1) All pesticide products must bear a label, the contents of which must show clearly the following: the name, brand or trademark under which the product is sold; name and address of the producer; the net contents; product registration number; producing establishment number; ingredient statement; warning or precautionary statement; directions for use; and the use classification. The label should be securely attached to the immediate container of the product. When products are stored in bulk containers, whether mobile or stationary, a label shall be attached to the container in the immediate vicinity of the discharge control valve.
(2) The label must have the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients with each ingredient designated as active or inert. The name for each ingredient shall be the accepted common name, if there is one, followed by the common name. In no case shall the use of a trademark or proprietary name be permitted. For pesticides which change in chemical composition significantly with age, an expiration date must be given. Warnings concerning toxicological hazards including hazard to children, environmental hazard, or physical hazards must be on the label. Environmental hazards warnings shall include toxicity to wildlife and fish,

and warnings to keep the pesticide out of lakes, streams and ponds. The directions for use shall include sites where the product may be used, pests associated with each site, dosage rates, method of application, frequency and timing of application, limitation on reentry to treated areas, and storage and disposal of pesticide and its container. It is a violation of federal law to use a product in a manner inconsistent with its labeling.

b. Storage

(1) Pesticides and excess pesticides (and their containers) whose uncontrolled release into the environment would cause unreasonably adverse effects on the environment, should be stored only in facilities where due regard has been given to the hazardous nature of the pesticide, site selection, protective enclosures, and operating procedures. Adequate measures must be taken to assure personal safety, accident prevention, and detection of potential environmental damages. The storage criteria following are for pesticides and excess pesticides which are highly toxic or moderately toxic and are required to bear the words DANGER, POISON, or WARNING or the skull and crossbones symbol on the label. Storage sites should be located where soil texture/structure and geologic and hydrologic characteristics shall prevent the contamination of any water system by runoff or percolation. Drainage from the site should be contained, monitored, and if contaminated, disposed of as excess pesticide. The storage facility should be a dry, well-ventilated, separate room, building or covered area where fire protection is provided. The entire storage facility should be kept locked to prevent unauthorized entry. Identification signs should be placed on rooms and buildings to advise of the contents and warn of their hazardous nature. All items of moveable equipment used for handling pesticides at the storage site should be labeled “contaminated with pesticides” and should not be removed from the site unless decontaminated. Provisions must be made for decontamination of personnel and equipment. All contaminated water should be disposed of as excess pesticide.

(2) Pesticide containers should be stored with the label plainly visible. Containers should be in good condition. Metal or rigid plastic containers should be checked to ensure lids and bungs are tight. Each pesticide formulation should be segregated and stored under a sign containing the name of the formulation. All containers should be stored off the ground in an orderly way to permit ready access and inspection. They should be placed in rows with all labels visible and with lanes to provide access. A complete inventory should be maintained indicating the number, identity, and age of containers in storage. Containers should be checked regularly for corrosion and leaks. Materials for spill treatment, such as, adsorptive clay, hydrated lime, and sodium hypochlorite should be kept on hand. Safety procedures include use of proper clothing and respirators, as required, by precautions on the label. The storage facility should be registered with the Fire Department and the Department provided with a floor plan showing pesticide locations.

c. Disposal

Before disposing of excess pesticides, the owner should try to exhaust the supply for the purposes originally intended or return the material to the manufacturer or distributor for potential relabeling, recovery of resources, or

reprocessing. Pesticides and containers must be disposed of in a manner consistent with its labeling.

d. Spills
Any spills of pesticides, whether in the storage facility or while in use, shall be reported per Chapter 6 of this KNPR.

e. Reporting
Each application of a restricted use pesticide must be documented and the records maintained at the principal place of business for two years. The records must include: the date and time of treatment, the name of the person directing or authorizing application, location, target area, total acreage to be covered, pest to be controlled, pesticide used and application rate, type of equipment used, and name of applicator. Certification can be revoked for violation of CFR, including use of a pesticide inconsistent with its labeling, non-maintenance of records, fraudulent records, or use of any registered pesticide classified for restricted use in a manner other than that use.

f. At KSC, the EPB manages pesticide procurement, storage, use, and disposal. The EPB is responsible for implementing a Pesticide Storage Inspection Program.

g. Training
   (1) Categories of applicators are identified in CFR and FAC. Each category has specific certification requirements for applicators.
   (2) In Florida, the categories and knowledge requirements are identical to federal requirements. Each applicator shall be examined to determine competency before certification and licensing. The Department of Agriculture shall issue an applicator license.
   (3) All persons who apply restricted-use pesticides, unless they operate under the direct supervision of a licensed applicator, shall be licensed in Florida. The handling and application of restricted-use pesticides may be accomplished by no more than two unlicensed applicators, when they are under the direct supervision of a licensed applicator. The licensed applicator shall be immediately available, if and when needed. The license is in effect for two years, and renewal is contingent upon the applicator demonstrating evidence of continued competence. Competence can be demonstrated by re-examination or by accruing continuing education units through participation in approved seminars and professional meetings.

h. KSC organizations storing, mixing, and applying pesticides shall:
   (1) Provide to the EPB, on an annual basis, their current or proposed Pest Control Program Document for review and comment.
   (2) Require employees to wear appropriate protective equipment and clothing, while mixing and applying pesticides and while cleaning equipment used to apply pesticides.
   (3) Assist the EPB in specialized investigations and elimination of insects, rodents, etc., associated with infestations of spacecraft/vehicles, food serving facilities, food storage facilities, and similar type vehicles/facilities.
   (4) Identify to the EPB facilities/areas that require spraying due to poor housekeeping practices, poor sanitary habits, or potential health hazards to personnel.
   (5) Ensure each operator has two lockers, one for work shoes, coveralls, etc. that is not changed daily and the other for street clothes. Applicators that

have been working with pesticides, especially insecticides (e.g., EPA Category I, Category II, etc.), must take a shower and change clothes before going home after work.

(6) Maintain records of personnel handling or applying pesticides to include:
   (a) Training received
   (b) Date of physical examination
   (c) Accumulated exposure times

(7) Ensure pesticide workers' physical examinations are performed annually on those handling or applying pesticides. In addition, blood serum analysis is to be performed annually for those handling or applying pesticides.

CHAPTER 20. POLYCHLORINATED BIPHENYL (PCB) MANAGEMENT

20.1 Toxic Substance Control

Under the Toxic Substances Control Act, the EPA specifically regulates PCB manufacture, usage, storage, and disposal. 40 CFR 761 establishes prohibitions of and requirements for, the manufacture, processing, distribution in commerce, use, disposal, storage, and marking of PCB's and PCB items.

20.2 Implementation

At KSC, the EPB implements a management program for PCB use and storage. This includes the process for identification, marking, retro-filling, storage, inspection, inventory, and transportation to off-site disposal facilities.

20.3 Notifications

The EPB is responsible for providing all notifications to regulatory agencies concerning PCB compliance at all NASA-operated facilities at both KSC and CCAFS.

20.4 Inspection

The EPB shall implement an Inspection Program for PCB management and shall inspect facilities containing PCB items, including the PCB Storage Facility, for compliance with applicable regulations on at least annually. When compliance concerns are identified, the operational organization shall be responsible for corrective action. The inspections shall include a physical inspection of PCB items, a review of required records, and the Annual Document Log. This log must be completed by July 1, covering activities of the previous calendar year. Other required records include visual inspection reports, spill cleanup reports, disposal manifests, and any correspondence concerning compliance with time limitation for disposal.

20.5 Management of Oil Filled Electrical Equipment

All organizations generating potential liquid PCB waste or managing potential PCB contaminated electrical equipment must use the PWQ process for management instructions on handling the potential PCB wastestreams. Samples of the oil must be taken to determine if the oil is PCB contaminated. This should be done prior to taking the equipment out of service if possible. Once the equipment is taken out of service the equipment and oil must be managed per 40 CFR 761.50. Nonleaking ballasts and small capacitors shall be managed as controlled wastes, but are not subject to the special handling requirements outlined below. Small capacitors contain less than 1.36 kg (3 lbs) of dielectric fluid or, if the weight is unknown, have a total volume of less than 1639 cc (100 cubic inches). A capacitor whose volume is greater than 1639 cc and less than 3278 cc (200 cubic inches) may be managed as a small capacitor if the total weight of the capacitor is less than 4.08 kg (9 lbs).

The following waste generator standards will be used for the accumulation and storage of PCB waste material:

1. PCB wastes (greater than 50 ppm) listed below may be stored temporarily at a waste generator accumulation site for up to thirty days from the date removed from service. The container and labeling must comply with the TRP. The date the PCB item was removed from service must be marked on the container label (KSC label HWMPCB-2). The waste can be picked up by JBOSC Waste Management using Waste Support Request (Form 28-809).
    a. Nonleaking articles and equipment with intact seals. PCB articles are manufactured articles containing PCBs whose surfaces have been in direct contact with PCBs. These articles include capacitors, transformers, electric motors, and pumps.
    b. Leaking articles and equipment placed in nonleaking PCB containers with sufficient materials to absorb any liquid PCBs remaining in the item. PCB containers are any devices used to contain PCBs or PCB articles whose surfaces have been in direct contact with PCBs.
    c. PCB containers storing nonliquid PCB wastes such as contaminated soil and debris.
2. PCB containers storing liquid PCBs at concentrations of 50 ppm or greater must be removed from the generator accumulation site to the PCB storage building (K7-115) within 24 hours from the date the PCB item was removed from service. This support must be coordinated through the waste pickup process, Waste Support Request (Form 28-809), prior to the removal from service date to allow for waste pickup scheduling and to avoid regulatory violations.

KNPR 4000.1, currently provides guidance on turning in items that are to be excessed. Oil-filled equipment with PCB concentration < 50 ppm can be excessed through the NASA Reutilization, Recycling, and Marketing Facility (RRMF).

20.6 Policy for PCB Bulk Product Waste

This policy establishes requirements for the determination, management, and disposal of potential Polychlorinated Biphenyls (PCB) bulk product waste at NASA KSC in the form of painted or coated structures. These requirements are necessary to comply with Federal regulations and to minimize worker exposure to PCBs. This Policy does not address the potential for other toxic constituents that may be contained in paints/coatings or in the structure itself. The following paragraphs describe the legal requirements that support this policy, applicability, and the PCB sampling protocol for materials at KSC.

The disposal of structures with PCB paints/coatings is regulated by the Toxic Substance Control Act (TSCA) pursuant to Federal regulation 40 CFR 761. As such, demolition debris with PCB paints/coatings is regulated as PCB Bulk Product Waste, if PCB concentrations in the paint/coating are greater than or equal to 50 parts per million (ppm). This Policy sets forth requirements to ensure that PCB bulk product waste at KSC is appropriately identified, managed, and disposed of in accordance with Federal requirements. Recycling of materials, especially metals and concrete should be evaluated in all instances and implemented where feasible.

The applicability of this policy is limited to demolition debris containing load-bearing elements. This policy does not address corrosion control activities on metal structures where there is process knowledge of the coatings that have been applied to the structure. The requirements of this Policy are as follows:

20.6.1 Determination of Paint Coatings

The TSCA does not require testing of painted/coated surfaces for PCBs. However, improper storage and/or disposal of PCB bulk product waste is a violation of TSCA, regardless of whether or not it has been tested to determine its PCB content. Based upon knowledge and past experience in the Federal sector in general and at KSC specifically, the potential for the presence of PCBs in paints/coatings on KSC structures has been well documented. Therefore, to comply with Federal TSCA requirements and to protect human health and the environment, exterior paints and structural load-bearing surface paints/coatings of materials that are being considered for recycling must be either sampled and analyzed using the following guidance, or they shall be considered to contain greater than 50 ppm PCBs unless the KSC Environmental Program Branch Chief approves an exception to these Policy requirements based upon adequate documented process knowledge. Requests for exemptions from this Policy and their concurrence shall be documented in writing.

Surface samples must be collected and analyzed, prior to any use of heat (such as welding torches for cutting), recycling, or smelting, in order to determine the presence of PCB painted materials. KNPR 1840.19 – KSC Industrial Hygiene Programs, Section 3.4, describes a sampling program for Corrosion Control Operations based upon square footage and homogeneous areas. "*Homogeneous painted areas*" are defined as painted/coated areas that are similar in color, function, and form. Sampling for PCBs in painted/coated materials should follow these procedural requirements. Sample locations should be randomly selected to characterize each homogeneous area of painted surface coatings. Therefore, the following approach is required when sampling for PCBs in paints/coatings:

INDIVIDUAL HOMOGENEOUS AREAS

SURFACE AREA, SQUARE FEET	NUMBER OF SAMPLES
<1000	Minimum of 3
1000 to 5,000	Minimum of 5
5,000 to 10,000	Minimum of 7
>10,000	Minimum of 9

There are no established standards and methods for the collection of paint that potentially contains PCBs. Therefore, paint samples should be obtained in accordance with the cold-scraping method described in ASTM E1729-05, "Standard Practice for Field Collection of Dried Paint Samples for Lead Determination by Atomic Spectrometry Techniques." It should be noted that the heat gun method described in this Standard is not approved for the collection of the paint or coatings. Due to laboratory analysis requirements of obtaining 30 grams of paint/coating to run EPA Method 8082 for PCBs by Gas Chromatography, composite samples collected from multiple locations are acceptable to achieve the 30 gram weight requirement for a single sample. Include with the reported sampling results the sample identification and photographs of homogenous areas where samples were collected. All copies of sampling/analytical results must be provided to the NASA/KSC Environmental Program Branch.

If sampling analysis detects PCBs in the paints/coatings and a decision to remove the paints/coatings is made, the removed paint/coating waste must be stored and managed

according to the TSCA regulations for PCB waste, according to the PCB concentrations in the paints/coatings. Once all PCB paints/coatings have been removed from metal and/or concrete, the underlying material can be handled and recycled as non-PCB material.

The NASA project proponent shall report the approximate gross weight of all metal and concrete construction and demolition debris that are recycled to the KSC recycling coordinator at the time such materials are delivered to the recycler.

If samples are not collected from painted/coated surfaces and no process knowledge exists for the paint/coating, it shall be assumed to contain concentrations greater than or equal to 50 ppm and must be managed in accordance with 40 CFR 761.

20.6.2 Management

If demolition materials are to be recycled, the NASA project proponent shall provide written results of all testing to the recycling facility receiving materials if the materials have confirmed PCB presence at any concentration. All materials with PCB concentrations greater than or equal to 50 ppm are regulated by and must be managed in accordance with the requirements specified in 40 CFR 761. The contract documents shall require the contractor receiving these materials to submit a certification acknowledging receipt of the test results (notification) and that the materials shall be disposed of in accordance with 40 CFR 761. In addition, the contractor shall provide documentation of the materials disposition to the NASA Contract Officer. It may be feasible to remove paints/coatings from concrete and or steel to support recycling efforts; therefore recycling options should be evaluated as part of the project. However, if the project proponent determines that paints/coatings removal and material segregation/recycling is cost prohibitive, the PCB bulk product waste from construction and demolition debris must either be transported to:

1. the KSC Landfill on Schwartz Road in accordance with the site's operating permit and associated procedures;
2. an incinerator approved under 40 CFR 761.70;
3. a chemical waste landfill under 40 CFR 761.75;
4. a hazardous landfill regulated under the 3004 section of RCRA; or
5. managed in accordance with the thermal provisions of 40 CFR 761.7(c)(6).

In order to ensure appropriate long term management of the Schwartz Road Landfill, the following process has been established for disposal of PCB bulk product waste in the landfill. Prior to disposal of PCB bulk product waste at the Schwartz Road Landfill, a completed PCB Bulk Product Waste Notification Form estimating the number of loads will be submitted to the landfill operator via facsimile at 861-6114. This notification form shall be submitted by the organization proposing to dispose of the material a minimum of 24 hours prior to disposal and shall contain the appropriate information called for in the form. A copy of the notification form shall be stored at the scale house for reference by the scale house attendant. Upon entering the landfill, the driver must reference the PCN number and location of the project for proper identification and record keeping. The Landfill operators will maintain GPS coordinates of the location of all PCB Bulk Product Waste disposed of in the KSC Landfill.

20.6.3 Demolition

It has been demonstrated that paint chips containing PCBs have caused or contributed to environmental contamination at KSC, resulting in costly site cleanup. Demolition activities must be conducted in a manner that limits the potential release of paint chips. Therefore, the following environmental protective practices/engineering controls shall be used when the demolition of structures with potentially PCB-containing painted/coated surfaces occurs:

1. Contain demolition debris to impermeable surfaces where feasible. If a demolition project or debris storage area is located on a permeable surface and preliminary paints/coatings sampling data indicates the presence of PCBs in the surface coating of greater than 0.5 ppm, upon completion of the project the top 6 inches of soil and 6 feet wide from the disturbed area around the debris storage area shall be removed and disposed of in the Schwartz Road Landfill where it may be used as landfill cover. In the event the project proponent does not sample the paint/coating at the demolition site, the proponent shall comply with the removal of soil requirement.
2 Control stormwater runoff from the site with mechanisms such as hay bales and/or silt fences.
3. Conduct regular housekeeping to limit the potential runoff/migration of paint chips.
4. Collect and remove all remaining demolition debris within the demolition area upon completion of the project.
5. Upon completion of the project collect and containerize sediment adjacent to stormwater control mechanisms and transport to the Schwartz Road Landfill where it may be used as landfill cover.

20.6.4 Worker Protection

Personnel involved in the removal or disturbance of material coatings are to be advised in addition to the potential presence of PCBs, that lead, chromium, and other heavy metals may be present. The employer shall be responsible for ensuring personnel working with paints/coatings have assessed potential personnel exposures and employees have been provided appropriate personal protective equipment and appropriate training to use such equipment.

CHAPTER 21. RADIOACTIVE MATERIALS

21.1 KNPD 1860.1

KNPD 1860.1, as revised (KSC Radiation Protection Program) describes the handling of radioactive materials at KSC. This Instruction documents ionizing and non-ionizing radiation protection program policy and responsibilities to ensure conformance with referenced regulatory agency requirements for licensing, possession and use of radiation sources for the KSC. This Instruction applies to all KSC organizational elements, facilities, geographical areas, and operations under KSC jurisdiction or direction, including civilian and military personnel, prime and subcontractor organizations, tenants, principal investigators, and visitors.

It is KSC policy to exercise centralized control over the procurement, use, storage, transportation, and disposition of ionizing (e.g., radioactive materials, radiation producing machines) and non-ionizing (e.g., radio frequency/ microwave, lasers, ultraviolet, infrared, and visible) radiation sources to ensure compliance with applicable regulatory requirements; and to limit the exposure of personnel, facilities, and the environs to levels which are As Low As Reasonably Achievable (ALARA).

KSC's Radiation Protection Program is based on three fundamental principles:

a. Centralized and uniform control and enforcement;
b. Compliance with applicable regulations, standards, and guides; and
c. Elimination or minimization of personnel exposures to levels that are below regulatory limits and are as low as reasonably achievable (ALARA).

These basic principles are documented in the Program's Management Issuances, KNPD 1150.24, as revised and KNPD 1860.1, as revised, and KNPR 1860.1, as revised and KNPR 1860.2, as revised. Reference the most current version of KNPD 1860.1 for more detailed instruction concerning authorities, definition, responsibilities, general provisions, applicable documents, the summations, implementation, and functions.

21.2 KNPR 1860.1 and KNPR 1860.2

KNPR 1860.1, as revised (KSC Ionizing Radiation Protection Program), and KNPR 1860.2, as revised, (KSC Non-Ionizing Radiation Protection Program) details policy, administrative direction, organizational guidance, and procedural requirements of the NASA-KSC Ionizing Radiation Protection Program. This KNPR defines requirements and requirements regarding the approval, procurement, use, transfer/shipment, and disposal of sources of ionizing radiation. It provides general guidance concerning personnel monitoring requirements and emergency procedures, and describes the basic organization and responsibilities of the Radiation Protection Program as they pertain to personnel health protection and regulatory compliance.

All NASA elements under KSC jurisdiction or direction including associated contractors, tenants, transients, principal investigators, and visitors who are directly or indirectly involved with the procurement, use, storage, or disposition of radioactive materials and/or ionizing radiation producing machines/devices. The KSC Radiation Protection Program has been established to implement and maintain this policy.

CHAPTER 22. ENVIRONMENTAL NOISE

22.1 Regulatory Relationship

Under the Noise Control Act of 1972, the State and local Governments have primary regulatory authority which federal facilities must honor. Florida Statutes direct the Florida Department of Environmental Protection (FDEP) to "establish standards for the abatement of excessive and unnecessary noise." The Clean Air Act establishes an EPA Office of Air, Noise and Radiation. Under the Clean Air Act, the EPA may require any federal facility to control noise deemed to be a public nuisance.

22.2 Documentation

The KSC Chief Counsel is responsible for responding to any legal claims associated with damages alleged to have occurred due to Orbiter sonic booms.

22.3 Controls

The lead organization is responsible for ensuring compliance with the regulations. The EPB shall assist KSC organizations in determining the appropriate actions to control noise and shall notify the appropriate OR's of any public complaint associated with operational noise, including those that may have impacts to wildlife.

22.4 Monitoring

Monitoring of noise due to public complaint or regulatory intervention shall be performed by the Aerospace Medicine and Occupational Health Branch of Center Operations. Occupational Health shall submit the Monitoring Report to the appropriate OR's and the EPB shall maintain copies.

CHAPTER 23. REMEDIATION ACTIVITIES

23.1 Regulatory Requirements

KSC has a Hazardous and Solid Waste Amendment (HSWA) permit that mandates the investigation of any releases of hazardous waste or hazardous constituents at the facility regardless of the time at which the waste was released. KSC is also required to take appropriate corrective action for any such releases. The permit also requires the facility to comply with all land disposal restrictions. The investigation and cleanup of KSC's contaminated sites is performed with guidance and direction from the Environmental Protection Agency (EPA) Region 4 and the Florida Department of Environmental Protection (FDEP).

23.2 Documentation

a. The EPB shall notify the EPA Regional Administrator and FDEP in writing, within 15 calendar days of discovery, of any suspected new Area of Concern (AOC) or newly suspected Potential Release Location (PRL) as discovered. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.).
b. Solid Waste Management Unit (SWMU) Potential Contamination Notification
   (1) The EPB shall report to the EPA Regional Administrator/FDEP any noncompliance with this document resulting from a release from a solid waste management unit which may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the PCSO becomes aware of the circumstances. This report shall include the following:
      (a) Hazardous waste or hazardous constituents, which may endanger public drinking water supplies.
      (b) Information concerning the release or discharge of any hazardous waste or hazardous constituents, or a fire or explosion at the facility, which could threaten the environment or human health outside the facility.
   (2) A written report shall also be provided to the Regional Administrator/FDEP within 5 days of the time the PCSO becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. This report shall include the following:
      (a) Name, address, and telephone number of the owner or operator.
      (b) Name, address, and telephone number of the facility.
      (c) Date, time, and type of incident.
      (d) Name and quantity of materials involved.
      (e) The extent of injuries, if any.
      (f) Any assessment of actual or potential hazard to the environment and human health outside the facility. Estimated quantity and disposition of recovered material that resulted from the incident.

c. SWMU Notification
   (1) The NASA EPB shall report to the EPA Regional Administrator/FDEP any and all areas of concern discovered or suspected having a probable release that may endanger human health or the environment. The EPA/FDEP Hazardous and Solid Waste Amendments (HSWA) permit shall be modified to include the new operation or facility on the Corrective Action Management Plan (CAMP).
   (2) The NASA EPB shall be responsible for the notification and permit modification of the HSWA permit. All KSC organizations shall ensure all discovered or suspected releases to the environment are reported to the EPB.

23.3 Modifications to Operational SWMU's

Modifications to facilities located at, on or in any SWMU's shall require notification to and approval by the EPA and FDEP prior to the implementation of the modification. All KSC organizations shall use the KSC Environmental Checklist process to identify to the EPB their facility modification plans. The EPB shall coordinate the modification plans with the EPA and FDEP.

23.4 Remediation of SWMU's

The EPB shall maintain a schedule, in accordance with the permit, to investigate and cleanup SWMU's and suspected PRL's. The EPB shall manage and coordinate with the EPA and FDEP the performance of Confirmatory Sampling, RCRA Facility Investigations, Interim Measures, Corrective Measures Studies, and selected remedies for all sites. The results of these work plans, studies, and decisions shall be kept in an administrative file in the EPB. All investigations shall be conducted in accordance with the KSC Decision Process Document for the RCRA Corrective Action Program (KSC-TA-6168), Health and Safety Reference Manual (KSC-TA-6167), Environmental Setting Reference Manual (KSC-TA-6166), Sampling and Analysis Plan (KSC-TA-6169), and the Investigations Derived Waste Management Plan.

23.5 Controls

a. All KSC organizations that are involved in the handling of hazardous waste or materials must ensure that their activities are conducted in a manner that prevents the uncontrolled release of these wastes or materials into the environment. In the event of a release, the responsible organization must take steps to immediately clean up the release and limit the area impacted by the release. That organization must also notify the EPB by telephone at the time of the release per the procedures described in Section 5 of this KNPR.
b. Upon discovery of a contaminated site at a facility through the review of procedures, the OR must inform the EPB within 24 hours of that discovery.
c. For those OR's that discovers contamination, or if the EPB informs them that there is contamination at their facilities, they shall review all ongoing procedures to ensure that current operations are not causing or adding to the contamination. The OR shall take measures to eliminate the sources of any releases. These reviews and corrective measures must be provided to the EPB within 30 days of being notified of the discovery of contamination.

d. The EPB shall review these documents to determine if the corrective actions are appropriate and provide comments, if required.
e. The EPB is responsible for the overall investigation of suspected and contaminated sites and the management of corrective actions. Through the KSC Checklist process, the EPB shall issue guidance on the requirement for operations and training at active SWMU's.
f. The EPB shall manage the identification and reporting of the sites to the regulatory agencies; identify an Potential Responsible Party (PRP); and develop funding through Environmental Compliance and Regulation budget for the management of cleanups at sites not covered by a PRP.

23.6 Training

Personnel involved in the investigation or remediation of a SWMU shall have the training outlined in Title 29 CFR 1910, Subpart Z and Title 40 CFR Parts 264 and 265.

CHAPTER 24. TOXIC SUBSTANCES AND EMERGENCY PLANNING

24.1 Documentation

a. The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure data on the production, use, and environmental and health effects of chemical substances were obtained by the EPA and to provide a means by which the EPA regulates the manufacture, processing, distribution in commerce, use, and disposal of chemical substances.

b. The Emergency Planning and Community Right-to-Know Act (EPCRA), which is Title III of the Superfund Amendments and Reauthorization Act of 1986, was enacted to require persons to report the amount and location of hazardous chemicals produced, stored, used, or released to the environment each year in the United States.

(1) EPCRA is divided into three sections:

(a) Subtitle A - emergency planning and notification of hazardous materials (Sections 301 through 304).

(b) Subtitle B - reporting requirements for chemical inventories and releases (Section 311 through 313).

(c) Subtitle C - general provisions dealing with trade secret protection, public access to records, and penalties for noncompliance (Sections 321 through 330).

(2) Reporting Requirements:

(a) The following sections of EPCRA require reports to be submitted to the State Emergency Response Commission (SERC) or other regulatory entities. All reports filed by KSC shall be submitted through the EPB.

(b) Section 302

1. Section 302 is a one-time reporting requirement. Any contractor, who has an extremely hazardous substance (EHS) present at KSC in amounts greater than or equal to the threshold planning quantity (TPQ) of the substance, must notify the EPB. The EPB shall then notify the SERC. A list of EHS's and their respective TPQ's is available in 40 CFR 300 and 355.
2. To determine whether a contractor has an EHS that meets or exceeds the TPQ, the contractor must calculate the total amount of the EHS present at any one time at the facility, regardless of location, duration, number of containers, or methods of storage. The SERC defines all areas of KSC, including NASA-controlled areas at CCAFS, as one facility. All sources of EHS's, both pure forms and in mixtures at a level greater than or equal to one percent, should be added together and the total amount compared to the TPQ. The unit of the TPQ is pounds. An EHS present in a solution or mixture in an amount less than one percent (de minimis) is exempt and does not have to be added to the total amount for determination of exceedance of the TPQ. A total amount of an EHS present at less than the TPQ is exempt from the Section 302 reporting requirements. If the amount is equal to or greater than the TPQ, then the contractor is required

to report under Section 302.

(c) Section 303

Section 303 is a one-time notification to the SERC of an emergency contact at the facility. At KSC, the Chief of the EPB is the contact.

(d) Section 304

1. Section 304 requires releases of chemicals listed as EHS or CERCLA hazardous substances be reported to State and federal authorities. These lists are available in the Appendices of 40 CFR 355 and Table 302.4 of 40 CFR Part 302.
2. All spills or releases are to be reported to EPB per requirements of Section 5 of this KHB.

(e) Section 311

1. Section 311 requires Government agencies to submit Material Safety Data Sheets (MSDS) or a list of certain chemicals present within their facilities. Chemicals covered by this section are:
   a. Any of the EHS's that meet or exceed the TPQ or 500 pounds, whichever is less.
   b. Any of the hazardous chemicals that meet or exceed 10,000 pounds for which OSHA requires an MSDS to be maintained.
   c. In both cases, the amount is the total amount that is present in either a pure form or in a mixture on any one day. It is not a cumulative amount.
2. No list of OSHA regulated chemicals exists. Chemicals are ranked by OSHA as 1 of 9 physical hazards or 1 of 15 health hazards (29 CFR 1910.1200). An MSDS form shall list the hazards associated with the substance. In general, if a material has an MSDS, it is an OSHA-regulated substance.
3. Certain classes of materials are exempt from the OSHA MSDS requirement.
4. While 40 CFR 355 calls for MSDS's for each chemical that meets reporting requirements per Section 311 be submitted to the State Committees, the Florida SERC prefers facilities submit a list of chemicals instead of the MSDS's. Chemicals on the list must be grouped by the five EPA physical and health hazard categories: fire hazard; sudden release of pressure hazard; reactive hazard; immediate (acute) health hazard; and delayed (chronic) health hazard.
5. A chemical can fit more than one hazard category and all applicable categories should by noted on the report list. The OSHA hazard groupings noted on MSDS's must be converted to the five EPA categories.
6. Each contractor is required to determine which chemicals used, stored, or processed by the contractor meet reporting requirements under Section 311. Guidelines and formulas for calculating chemical quantities are given in the Section.
7. Concentrations should be listed on the MSDS for the hazardous chemical. If the concentration is not listed, then the person reporting is not required to search any further for the value and can assume the value is less than 1 percent (or 0.1 percent in the case of a carcinogen). The chemical is not required to be

added to the total amount for comparing to the TPQ.

8. Reporting under Section 311 is a one-time requirement. When a chemical meets requirements for reporting, then the SERC must be notified within 90 days.

(f) Section 312

1. Section 312 requires the chemicals covered by Section 311 and their location be reported to the SERC on an annual basis. The report is due to the SERC by March 1 for the previous calendar year.
2. EPB shall report for all contractors and NASA operations at KSC, therefore, each contractor and NASA operator must report amounts of covered chemicals that exceed 10 percent of the reporting threshold.
3. The chemicals and thresholds include:
   a. Any of the EHS's that meet or exceed the TPQ or 500 pounds, whichever is less.
   b. Any of the hazardous chemicals that meet or exceed 10,000 pounds for which OSHA requires an MSDS to be maintained.
4. In both cases, the amount is that which is present on any one day. The amount is not cumulative.
5. Lists of EHS's and their TPQ's are given in Appendices of 40 CFR 355.
6. The report shall be submitted to the SERC on Florida Tier Two forms. The Florida form differs from the federal form slightly in that Florida requires the actual amount of the chemical in pounds be reported, rather than ranges of weights.
7. The SERC has ruled that the entire confines of KSC, including NASA-controlled facilities on CCAFS, are one facility.

(g) Section 313

1. The Toxic Chemical Releases section applies to federal facilities no matter what the mission of the Agency. The facility must manufacture, process, or otherwise use a listed toxic chemical in amounts that meet or exceed threshold planning quantity. A Toxic Chemical Release Form (Form R or Form A) must be filed for each chemical present above the threshold level. The threshold amount for manufacturing, importing, or processing any listed chemical is 25,000 pounds per year. The threshold for other use (which includes cleaning) is 10,000 pounds per year.
2. The EPB shall report for all contractors and NASA operations at KSC, therefore, each contractor and NASA operator must report amounts of covered chemicals that exceed 10 percent of the reporting threshold.
3. The forms are submitted to the SERC and to the EPA in Washington, DC, by July 1 for the previous calendar year.

CHAPTER 25. NATURAL RESOURCES

25.1 Threatened and Endangered Species

a. Regulatory Relationships
Section 7 of the Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service on all actions that may affect a threatened or endangered (T&E) species or its habitat. The rules and requirements for these consultations are delineated in Title 50 CFR Part 402, which includes the form (e.g., formal, early, informal), parties involved and timing. Under the provisions of the Endangered Species Act, it is the duty of NASA and all federal agencies to protect and enhance these species. Therefore, prior to taking any actions on KSC, we must consider the impacts to these resources. This includes impacts to individuals of a species as well as populations.

b. Documentation
(1) KSC is home to more T&E species than any other wildlife refuge in the continental United States. Therefore, any project or action has the potential to impact one or more of these species.
(2) When the response to the KSC Environmental Checklist (KDP-P-1727), or Record of Environmental Consideration (REC) indicates that a project may impact a T&E species, a formal consultation with the U.S. Fish & Wildlife service must be conducted as described in KDP-P-1741.
(3) Reasonable and prudent measures often involve the requirement to "compensate" for the loss of habitat. For example, taking of scrub habitat for construction shall usually require new scrub habitat be restored elsewhere on KSC. The EPB is responsible for the overall management and coordination of compensation activities with input from other KSC organizations, as appropriate. Funding for such activities may be required from the program or project implementing the action.

c. Controls
(1) Whenever an action may affect any fish, wildlife or plant, it is prudent to determine if that fish, wildlife or plant is a protected species. This shall ordinarily be addressed as part of the Environmental Checklist (KDP-P-1727). However, in some cases, this issue is raised after implementation of a project has begun. For example, many roof repairs have the potential to impact nesting Least Terns, and this is only discovered after the job has started. In these cases, the project lead should halt operations and contact the EPB for further direction. All species should be treated as protected unless otherwise directed by the EPB.
(2) In the case where nuisance species such as alligators are impacting operations, the U.S. Fish and Wildlife Service should be contacted to remove them.
(3) Finally, a number of species are listed as protected or as species of special concern by State and local agencies. These species must also be protected, even though the review and consultation requirements under the Endangered Species Act do not apply. A good example of this case is the Gopher Tortoise. This species is typically protected via relocation from a construction site to elsewhere on KSC. Relocation may only be performed by personnel who are permitted by the State. Any questions

regarding the level of protection, if any, required for any species on KSC should be directed to the EPB.

25.2 Coastal Zone Consistency Determination

a. Regulatory Relationships
By law, all states must develop and implement Coastal Zone Management Programs. The Coastal Zone Management Act also requires all federally conducted or supported activities are consistent with the State Program in which they are undertaken.

b. Documentation
(1) All federal agencies performing or approving work in the coastal zone of any state must determine if their activities directly affect the coastal zone of that state. If they do, they must provide the state with the determination at the earliest possible time, but at least 90 days prior to the final approval of implementation of the activity, to allow the state time to concur or non-concur.
(2) The Florida Coastal Zone Management Plan describes the entire State of Florida to be within the coastal zone. However, it also lists several facilities, which are considered to be outside the coastal zone. The KSC is so listed. This does not mean, however, KSC projects are exempt from the regulatory requirement of determining consistency with the Florida Coastal Zone Management Program. Each project and/or activity must be reviewed to determine if the action shall affect areas outside KSC. Appropriate documentation would be sent to the State for their concurrence by the EPB. If the project shall affect the coastal zone and is consistent with the Florida Coastal Zone Management Plan, a consistency determination must be prepared and submitted to the State. The determinations are typically included in the Environmental Assessment or Environmental Impact Statement for the proposed project (KDP-P-1726).

25.3 Wetlands and Floodplains

a. Regulatory Relationships
EO 11988, “Floodplain Management,” and EO 11990, “Protection of Wetlands,” direct federal facilities to avoid impact to floodplains and wetlands, whenever practicable, and to develop procedures for protection of floodplains and wetlands.

b. Documentation
An analysis of all alternatives and early public notice of proposed impacts are required prior to approval of projects with floodplain or wetland impacts. Mitigation shall usually be required for all wetland impacts and these costs must be estimated and included in the project design costs. Biological analysis must be performed prior to destruction of wetlands for use as criteria for mitigation efforts. This is usually performed as part of the environmental permitting process.

c. Controls
Actions in floodplains and wetlands must be avoided unless there is “no practicable alternative.” OR’s shall ensure their organizations approve no project in a wetland or floodplain without proper documentation.

25.4 NASA Use of Areas Managed by the U.S. Department of the Interior

a. Of the 140,000 acres of land and water which comprise KSC, only a small portion has been developed by NASA (approximately 3,500 acres). The remainder is managed for NASA, by agreement, by the U.S. Fish and Wildlife Service (FWS) as the Merritt Island National Wildlife Refuge (MINWR) and by the National Park Service (NPS) as a portion of the Canaveral National Seashore. The NASA operational areas include the Industrial Area, Complex 39, the Shuttle Landing Facility, the KSC Visitor Complex, KSC roads and various other smaller areas. The KSC areas not developed for operational facilities are required as buffer zones because of the hazards associated with the launching and landing of space vehicles.
b. Whenever a project or action is proposed for an area within the MINWR outside an operational area, a Special Use Permit from the U.S. FWS is required. These permits are usually valid for one year. If the project shall last longer or is permanent, the area should be removed from the Refuge. The procedure is implemented by the Center Operations Directorate.

CHAPTER 26. CULTURAL RESOURCES

26.1 Regulatory Relationships

In 1966, Congress passed the National Historic Preservation Act (NHPA) to ensure places of historic value were preserved and enhanced. Section 106 of the Act requires federal agencies consult with the National Advisory Council on Historic Preservation on actions adversely affecting listed properties. Under 36 CFR, Part 800, the consultation with the Council is conducted primarily through the State Historic Preservation Office (SHPO). This is usually conducted using the State Clearinghouse coordination system established under EO 12372, but may be performed directly with the SHPO.

26.2 Documentation

KSC is mandated by the NHPA of 1966 to consider the effects on historic and archaeological properties of any action undertaken by NASA, its contractors or tenants on KSC land. There are two categories of properties of concern: those listed on the National Register of Historic Places and those eligible for listing. A listing of listed and eligible properties may be found on the EPB Home Page. Whenever a project or action shall or may adversely affect one of these properties, KSC must consult with the State Historic Preservation Officer (SHPO) and the National Advisory Council on Historic Preservation. This process is the responsibility of EPB as documented in KDP-P-1733. Determination of the need for consultation is typically done through the use of the KSC Environmental Checklist process (KDP-P-1727).

26.3 Controls

a. No action should be taken on any listed historic property without concurrence from the EPB and the SHPO, if it is determined by the EPB that the property shall be adversely affected. All actions involving listed historic properties should be coordinated with EPB through the use of the KSC Environmental Checklist process KDP-P-1727.
b. Archaeological sites are found in many places on KSC. Therefore, prior to any digging or excavation, the EPB should be consulted using the KSC Environmental Checklist to determine if there is a potential to affect a known or unknown site. If excavation reveals any artifacts that might be considered historical in nature, work must cease and the EPB contacted. Refer to KDP-P-1733 for the process to modify a Historic and Archaeological Site.
c. Should a requestor propose to lease a piece of equipment or facility that is a listed historic property, the EPB must determine if the activity for which the property shall be used shall have an adverse affect on the property. The request for this evaluation shall typically come from the Real Property Office. The process is documented in KDP-P-2569.

CHAPTER 27. MANAGEMENT INFORMATION SYSTEMS

27.1 NASA Environmental Tracking System (NETS)

a. The NETS is an information management tool (central database) for assisting NASA and contractor personnel in the collection, maintenance, and reporting of environmental data related to KSC operations.
b. The NETS environmental database is maintained for the Agency at Glenn Research Center. KSC has access to the system from personal computers located in EPB and various operational areas. Multiple users at KSC shall be responsible for data input. EPB shall consolidate the information and submit it to NASA Headquarters. Data to be input shall be determined as modules are developed and implemented.

27.2 Training

It shall be the responsibility of each OR to identify individuals requiring training in NETS to the EPB NETS Data Administrator. Online training shall be available and EPB representatives shall be available for guidance during the training period.

27.3 Other Systems

a. The EPB shall maintain data tracking systems necessary to schedule and track environmental actions not covered in NETS, or in the interim period between creation of the data and the point in time when the specific NETS module covering that data comes online. Each primary organization shall maintain an independent data tracking systems necessary to adequately and fully coordinate its environmental actions, and periodically provide required information to the EPB. Likewise, the EPB shall provide information updates to the OR, when required. The type of databases the EPB shall maintain are primarily data required by outside regulatory agencies and additionally, information required to ensure the proper control of environmental projects and actions at KSC.
b. Some examples of the databases maintained by or for the EPB are:
   (1) Air Source Inventory
   (2) Energy Utilization and Consumption Report
   (3) Operational and Groundwater Monitoring Reports Tracking
   (4) Permit Tracking
   (5) Pollution Incidents

CHAPTER 28. RECYCLING, POLLUTION PREVENTION & AFFIRMATIVE PROCUREMENT

28.1 Recycling

a. All KSC organizations are responsible for contributing to Agency and Center goals for recycling. These goals shall be maintained on the EPB and Principal Center for Recycling and Affirmative Procurement web pages. A 35 percent diversion of waste to landfills by 2010 is the current Agency goal. EPB shall be responsible for providing guidance and direction to KSC organizations in the requirements associated with this compliance.

b. The purpose of the Diverted Aggregate Reclamation and Collection Yard (DARCY) is to establish a diverted C&D material processing area located on KSC that would serve as a consolidation area for expected salvageable construction and demolition waste destined for disposal at the existing Class III C&D landfill located at KSC on Schwartz road. This new facility would allow KSC to reclaim valuable resources once classified as C&D waste. EPB is responsible for the DARCY management plan that provides handling procedures, surveillance and emergency control plan at the DARCY. In order to meet the Agency's 35% diversion of waste goal, KSC needs to find new and innovated practices to reclaim or reuse waste materials. C&D waste streams account for approximately 65% of all waste generated on KSC. It is essential that KSC reduce the amount of C&D waste discarded through renovation, reuse, recycling or all three.

c. Programs: Recycling Programs are implemented by the Center Operations Directorate. Center Operations administers Recycling Programs for aluminum cans, paper, cardboard and others as they are developed. Logistics Operations administers recycling of all other recycled commodities. Sales of recyclable commodities are conducted by the Property Disposal Officer in Logistics Operations.

d. Funds: Funds are received from the sale of excess commodities designated as recyclable. The funds shall be reconciled after sales and EPB shall manage the recycling funds for the Center. Section 608 of Public Law Number 103-329 allows federal agencies to retain the funds generated by the recovered through Recycling or Waste Prevention Programs. These funds can be expended for the following purposes: Acquisition, Waste Reduction and Prevention, and Recycling Programs as described in EO 12873. Other Federal Agency Environmental Management Programs, including but not limited to, development and implementation of Hazardous Waste Management and Pollution Prevention Programs. Other employee programs as authorized by law or as deemed appropriate by the head of the federal agency.

28.2 Affirmative Procurement

a. All KSC organizations are responsible for compliance with EO 13101.

b. Logistics Operations administers KSC's Affirmative Procurement Program, including facilitating awareness across the Center, assessing performance, and compiling Center wide information for annual reporting requirements.

28.3 Pollution Prevention

a. EPB is responsible for chairing the Pollution Prevention Working Group. This is a group comprised of OR's and other interested parties who meet on a regular basis to discuss pollution prevention, recycling, and affirmative procurement issues and develop strategies and policies to address them.
b. EPB shall revise the Center-wide Pollution Prevention Plan on a routine basis with input from P2WG members.
c. Pollution prevention projects shall be solicited and compiled and status updated regularly. Projects shall be presented annually at a session of the Quarterly Environmental Leadership Briefing.

CHAPTER 29. KSC ENVIRONMENTAL POLICY FOR RECLAMATION & SALVAGE

29.1 Policy

This Policy sets forth the Center's Environmental Policy regarding reclamation, salvage, and/or resale of Center materials through the KSC Reutilization, Recycling, and Marketing Facility (RRMF). Categories of materials covered by this Policy include, but are not limited to, oil-filled equipment, lead acid batteries, scrap metal, electronic equipment, heavy/movable equipment, compressed gas cylinders, and severed flex hoses.

It is the policy of NASA and this Center to recycle and/or reuse materials when it is safe and cost-effective to do so, in the following priority order:

a. Eliminate or reduce pollution at its source;
b. Recycle to the maximum extent possible and in an environmentally safe manner;
c. Treat pollution which cannot be eliminated at its source or recycled; and
d. Properly dispose of whatever cannot be eliminated at its source, recycled, or treated.

29.2 Responsibility

The organizations (NASA and/or contractor) responsible for environmental contamination at the RRMF which occurs as a result of failure to follow this policy, shall be held liable for all clean up and/or remediation costs associated with such contamination.

29.3 KSC Reutilization, Recycling, and Marketing Facility (RRMF)

The keys to recycling materials using good environmental management practices at salvage/reclamation operations are preventing spills/releases; and properly identifying, describing, and documenting materials before they are transferred to the RRMF.

The RRMF shall accept materials only if they meet the following criteria:

a. No leakage of any type of fluid from equipment or containers;
b. No visible indication of old spills/releases on outside of equipment or containers that could be washed off from rainfall;
c. All equipment being offered for sale as scrap must be, in addition to being free of leaks and external contamination, drained of all fluids;
d. All items must be accompanied by required documentation, KSC Form 7-49 (or equivalent), and identified with a full, written commercial description.

The RRMF shall not accept treated lumber (arsenic, chromated copper arsenate, etc.), explosive materials/ordnance, blast media, hazardous materials (PCBs, asbestos, etc.), leaking equipment, radioactive wastes, uncrushed drums, intact compressed gas cylinders, intact flex hoses, or biomedical wastes. Any equipment which is found to be leaking during the initial inspection of the delivery to RRMF shall be reported as a spill.

It is the financial and environmental responsibility of the organization sending the equipment to the RRMF to ensure appropriate clean-up and disposition of the equipment and any other contamination caused by it.

Liquid-containing items which are delivered to the RRMF with the intent of resale but which are at some point re-designated for sale as scrap metal, shall be properly drained (into impermeable containment sufficient to collect and contain 100% of all liquids in the equipment) by RRMF personnel and thereafter be managed under the requirements for scrap metal.

Once material has been accepted by the RRMF personnel it is their responsibility to ensure that the material is stored in a manner that prevents environmental contamination. It is also the responsibility of RRMF personnel to remove detachable labels and/or signage indicating that the material is NASA property, before offering the material for sale, salvage, or reclamation purposes.

Table A summarizes the requirements for some of the most common materials sent to the RRMF. This table summarizes only the major environmental requirements for delivery/acceptance of materials to the RRMF as well as general storage requirements of the materials while at the RRMF. The information in this table is for summary purposes only and should not be construed as a comprehensive listing of additional and/or non-environmental requirements that may exist. Table B is a list of materials not accepted by RRMF.

29.4 Procedures

In order to successfully implement this Policy, the Center must develop and implement adequate procedures addressing inspection, transportation, and storage activities at the RRMF and other Center organizations to prevent environmental contamination. It is the responsibility of the organization transferring items to the RRMF for reclamation, salvage, and/or resale to ensure that all materials sent to the RRMF meet the minimum requirements of this Policy at the time of delivery to RRMF.

CHAPTER 30. ENERGY MANAGEMENT

30.1 NASA Agency Energy Mission Statement

Improving energy efficiency to save taxpayer dollars, reduce emissions contributing to air pollution and global climate change, and conserve precious natural resources for future generations.

30.2 KSC Policy

Energy efficiency is everyone's responsibility. All KSC organizations shall comply with federal requirements and perform day-to-day activities as energy efficiently as possible (e.g., designing efficient equipment and facilities, buying efficient products, operating/maintaining equipment and facilities at peak efficiency, and turning off systems when not in use).

30.3 Division of Responsibilities

a. All KSC employees and tenants:
   (1) Carry out day-to-day functions with good energy efficiency practices.
   (2) Report energy waste from improperly operating equipment to appropriate Trouble Call Office, and submit opportunities for improvement to your organization's Energy Working Group member.
b. KSC Energy Manager (resides in EPB):
   (1) Represent KSC on NASA Energy Efficiency Board and NASA Energy/Water VITS and chair KSC Energy Working Group (KSC EWG).
   (2) Lead planning and program implementation to ensure compliance with federal and NASA mandates, and communicate progress through metrics.
   (3) Ensure effective energy utility purchase.
   (4) Ensure submittal to NASA Headquarters of deliverables such as budget exhibits, reports, self-assessments, spot check responses and special data collections.
   (5) Serve as technical contact for energy budgeting, and manage special funds for energy projects, such as Utility Rebates and Department of Energy funding.
c. NASA program and institution organizations and supporting contractor organizations, regarding facilities and operations under your responsibility:
   (1) Participate in Energy Working Group.
   (2) Plan and implement an Energy Management Program that ensures compliance with federal and NASA mandates consistent with KSC Energy Program, and communicate progress through metrics.
   (3) Ensure efficient and cost-effective utility use by applying energy conservation techniques and shifting load to cheaper times in rates.
   (4) Contribute to deliverables to NASA Headquarters such as budget exhibits, reports, self-assessments, spot check responses, and special data collections via NETS and otherwise.
   (5) Forecast program's energy consumption/cost.
d. KSC facility and equipment design organizations ensure new construction and

modifications are compliant with federal and NASA energy mandates.

e. Center Operations Supply, Equipment, Transportation, and Center Support Branch coordinates KSC response to transportation mandates with General Services Administration.

TABLE- A: MATERIALS CHART FOR RRMF

Materials/Items	Requirements for Acceptance at RRMF (or originating organization's responsibility)	Storage Requirements at RRMF (RRMF responsibility)	Relevant NASA Environmental Guidance
Oil-filled equipment	*Drained of free-flowing liquids *Exterior visually free of oil or other contamination *Items which previously contained dielectric fluid must be accompanied by a copy of analytical results taken within the past 6 mos. Documenting that the fluid did not contain PCBs =< 50 ppm *KSC Form 7-49 or equivalent	*Store drained items on impervious surface with rain protection to prevent leakage/runoff to soil	TA-C3 is developing Policy guidance for this; in the interim Denise DeLaPascua's e-mail guidance of 03/02/04 provides direction
Batteries: Lead-acid and Silver- Zinc	*Undrained, not leaking *Adequately secured to pallets or containerized, and protected against short circuits *Accompanied by MSDS *Identified as either as Lead-acid or Silver-Zinc *KSC Form 7-49 or equivalent	*Batteries on pallets shall not be stacked in any way that puts weight on battery terminals *Store batteries in segregated location inside shelter on impervious surface with rain protection	
Drums	*Emptied of all free-flowing liquid *Crushed and palletized by JBOSC *KSC Form 7-49 or equivalent	*Store palletized, crushed drums on impervious surface, protect from rainfall until delivered to recycler	*Process Waste Questionnaire/ Technical Response Package (PWQ/TRP)
Equipment Containing Ozone-Depleting Substances (ODS, e.g. Freon) **unusable**	*Properly drained (recover ODS) *Labeled "Empty" *KSC Form 7-49 or equivalent	*Once drained, there are no special storage requirements	
Equipment Containing	*Do not drain	*Protect from rainfall	

Ozone-Depleting Substances **for sale as usable equipment**	*Certification that equipment is not leaking * KSC Form 7-49 or equivalent		
Scrap Metal/Structural Steel	*Visibly clean of all residual oils/contaminants *Clearly identified in writing as intended for sale as scrap only *KSC Form 7-49 or equivalent	*Segregate from items which have the potential to be sold for reuse	
Flex Hoses	*Decontaminated and certified as such *Mechanically rendered unusable (by cutting, crushing, or other means) for anything but scrap *KSC Form 7-49 or equivalent	*Store with other scrap metal	Mike Cardinale, TA-C2 shall be POC for follow-on actions to develop detailed procedures
Compressed Gas Cylinders (non-acetylene)	*Return empty cylinders to vendors, if possible *If impossible to return to vendors, ensure cylinders are empty, remove valves and drill a hole large enough that the inside of the cylinder can been seen and verified to be clean and dry. *KSC Form 7-49 or equivalent	*Store with other scrap metal	
Acetylene Gas Cylinders	*Return empty cylinders to vendors, if possible *Acetylene cylinders may contain asbestos so coordinate with CHS Environmental Health before cutting or disturbing structural integrity of acetylene cylinders. If the cylinder is found to contain asbestos RRMF cannot recycle them. See Table B.	* Only store at RRMF under special circumstances and only according to guidance from CHS Environmental Health	*OMI Q3108 Rev. D 3/13/03 Compressed Gas Cylinders Handling and Use at KSC and CCAFS *LSV-P-5121 Management of Government/Vendor Owned Cylinders.
Magnetic Tapes	*KSC Form 7-49 or equivalent	*Protect from rainfall	
E-Waste (a generic	*Any hazardous materials must be	*Protect from rainfall	

term for a variety of waste containing electronic components including products used for data processing, telecommunications or entertainment such as computers, monitors, TV sets, mobile/cell phones, PDAs, and electronic equipment used in industrial settings) **This does not include PCs & other equipment held for sale as usable**	removed – e.g. mercury, PCBs, etc. – and certified as such *KSC Form 7-49 or equivalent		
Precious Metals	*KSC Form 7-49 or equivalent	*Protect from rainfall	USA Property Custodian Guide, USA000430 PWQ/TRP
Heavy/Movable Equipment (e.g. forklifts, lawn mowers, etc.) **unusable**	*Drained of all fluids (fuel, hydraulic oil, etc.) *Exterior visibly clean of all oil/contaminants *Identified as intended for sale as scrap *KSC Form 7-49 or equivalent	*Store on impervious surface with rain protection	

Heavy/Movable Equipment **for sale as usable equipment**	*Inspect all fluid lines & reservoirs and certify as intact and not leaking *Exterior visibly clean of all oil/contaminants *KSC Form 7-49 or equivalent	*Store on impervious surface with rainfall protection *Segregate from scrap metal *Conduct routine inspections for leaks, promptly clean up any contamination from leaks, and store equipment in secondary containment until leak is fixed	

TABLE - B: MATERIALS NOT ACCEPTED BY RRMF

RRMF Shall NOT Accept These Materials for Salvage/Reclamation	Relevant Guidance Documents for Disposal
Visibly Leaking Equipment/Containers	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Blast Media	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Uncrushed Drums	JBOSC Interim Guidelines for Disposition of Empty Drums
Treated Lumber	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Explosives/Ordnance	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Radioactive Materials	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Intact Compressed Gas Cylinders and Acetylene Cylinders Containing Asbestos	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Intact Flex Hoses	
Hazardous Materials	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Biomedical Wastes	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)
Non-Lead & Non-Silver Zinc Batteries such as:	Process Waste Questionnaire/Technical Response Package

• Lithium Batteries (managed as Universal Waste) • Mercury Batteries (managed as Universal Waste) • Nickel-Cadmium West Cell Batteries Containing Potassium Hydroxide Electrolyte Solution (managed as Universal Waste) • Nickel-Cadmium Dry Cell Batteries (managed as Universal Waste)	(PWQ/TRP)

TABLE – C: ENGINEERING REVIEW COMMENTS FORM (KSC FORM 19-21)

ENGINEERING REVIEW COMMENTS	
☐ DESIGN ☐ CRITERIA ☐ MSC ☐ FINAL ☐ AFTER ____%REVIEW _____ *(Office Symbol)*	

PROJECT	SECTION	ENGINEER

ITEM NUMBER	DRAWING OR PARAGRAPH NUMBER	COMMENTS	ACTION BY REVIEW CONFERENCE

KSC FORM 19-21 (REV 4/89) (C/G 9/94)