

Kennedy NASA Procedural Requirements

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KSC Environmental Requirements

TABLE OF CONTENTS

Section	Page
PREFACE	6
P.1 Purpose	6
P.3 Authority.....	6
P.4 References	6
P.5 Cancellation	6
CHAPTER 1. LIST OF REFERENCES	6
1.1 Federal Documents.....	6
1.2 Codified Federal Regulations.....	7
1.3 State and Regional Documents	9
1.4 Other Regulations.....	10
1.5 NASA and KSC Documents.....	10
1.6 Kennedy Customer Agreements	11
1.7 Kennedy Documented Procedures (KDP's).....	12
1.8 Environmental Checklists.....	12
1.9 KSC Forms (Hazardous Waste).....	12
1.10 Other Documents.....	12
CHAPTER 2. DEFINITIONS	13
2.1 Best Management Practices (BMP).....	13
2.2 Code of Environmental Management Principles (CEMP)	13
2.3 Environmental Management System (EMS).....	13
2.4 Environmental Objective	13
2.5 Environmental Policy Letter (EPL).....	13
2.6 Environmental Working Group (EWG).....	13
2.7 Waste Management Working Group (WMWG).....	13
2.8 KSC Energy Working Group (KSC EWG).....	14
2.9 KSC Environmental Program Branch (EPB).....	14
2.10 Lead Organization (Maintenance).....	14
2.3 Lead Organization (Construction)	14
2.2 Lead Organization (Operations).....	14
2.13 Legal and Other Requirements	14
2.4 National Environmental Policy Act (NEPA).....	14
2.1 Organizational Representative (OR).....	14
2.16 Pollution Control and Sanitation Officer (PCSO).....	15
2.17 Pollution Prevention Working Group (P2WG).....	15
2.18 Primary Organization	15
CHAPTER 3. KSC ENVIRONMENTAL POLICY FOR RECLAMATION & SALVAGE	16
3.1 Policy	16
3.2 Responsibility.....	16
3.3 KSC Reutilization, Recycling, and Marketing Facility (RRMF)	16
3.4 Procedures	17
CHAPTER 4. GENERAL ENVIRONMENTAL RESPONSIBILITIES	18
4.1 NASA Kennedy Space Center Environmental Policy Statement	18
4.2 Center Boards and Committees.....	18
4.3 Principal Center	19
4.4 Developing an Environmental Management System	19
4.5 Preparing Documentation	19
4.6 External Communications	19
4.7 Interpreting Regulation and Establishing Policy.....	20
4.8 Implementing Policy and Regulations.....	20
4.9 Inspection, Monitoring, Testing, and Reporting.....	20
4.10 Training.....	22
4.11 Public Involvement.....	22
4.12 Violations	23
CHAPTER 5. ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL ANALYSIS	24
5.1 Regulatory Relationships	24
5.2 Documentation.....	24
CHAPTER 6. POLLUTION INCIDENT REPORTING AND NOTIFICATION	26
6.1 Regulatory Background	26
CHAPTER 7. SPILL PREVENTION, CONTROL AND COUNTERMEASURES PLAN	29

7.1	About the Program	29
7.2	Background and Regulatory Requirements	29
7.3	Objective and Scope	30
7.4	Plan Organization	30
CHAPTER 8.	PERMITTING AND COMPLIANCE	32
8.1	Permit Application Review and Submittal	32
8.2	Inspection, Monitoring, Testing and Reporting	33
CHAPTER 9.	AIR POLLUTION	36
9.1	Regulatory Requirements	36
9.2	Documentation	36
9.3	Permits	36
9.4	Inspection, Monitoring, Testing and Reporting	38
CHAPTER 10.	WATER POLLUTION	40
10.1	Regulatory Relationships	40
10.2	Petroleum Contact Water (PCW)	40
10.3	Documentation	40
CHAPTER 11.	WATER CONSERVATION AND CONSUMPTIVE USE	44
11.1	Water Conservation	44
11.2	Consumptive Use	44
11.3	Kennedy Space Center Consumptive Use Permit 50054	44
11.4	Dewatering Operations	45
11.5	Permitting Process for Individual or General Permits	46
11.6	Monitoring	47
11.7	Reports	47
CHAPTER 12.	DRINKING WATER	48
12.1	About the Program	48
12.2	Compliance Monitoring & Reporting	48
12.3	Construction or Modification of Drinking Water Treatment or System	49
12.4	Water Conservation and Reuse	50
12.5	Projects That Require Permitting	50
CHAPTER 13.	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	54
13.1	About the Program	54
13.2	Point Source Discharges	54
13.3	Stormwater	54
13.4	Stormwater from Industrial Activities	54
13.5	Stormwater from Construction Activities	55
13.6	Projects That Require Permitting	56
12.7	Permitting Process	57
CHAPTER 14.	STORMWATER	58
14.1	About the Program	58
14.2	Construction or Modification of Stormwater Management Systems	58
14.3	Permitting Process	59
14.4	Monitoring	61
14.5	Violations of Permit Conditions	61
CHAPTER 15.	DOMESTIC WASTEWATER	62
15.1	About the Program	62
15.2	Wastewater Discharges	62
15.3	Onsite Sewage Treatment and Disposal Systems (Septic Tanks, Domestic Treatment Plants, Holding Tanks, and Chemical Toilets)	63
15.4	Chemical Toilets	63
15.5	Enforcement	64
15.6	Construction or Modification of Domestic Wastewater Collection/Transmission Systems	64
CHAPTER 16.	INDUSTRIAL WASTEWATER	69
16.1	About the Program	69
16.2	When do I need a Permit?	69
16.3	Industrial Wastewater Discharge Authorization	70
16.4	Enforcement	71
16.5	Construction or Modification Industrial Wastewater Treatment Systems	71
16.6	Permitting Process	71
16.7	Monitoring	72
16.8	Violations of Permit Conditions	73
16.9	Reports	73

CHAPTER 17. HAZARDOUS AND CONTROLLED WASTE	74
17.1 Hazardous Waste Management (HWM)	74
17.2 Universal Waste (UV)	74
17.3 The Resource Conservation and Recovery Act (RCRA).....	74
17.5 Treatment, Storage, and Disposal Facilities (TSDF).....	74
17.6 Environmental Program Branch (EPB)	74
17.7 EPB Responsibilities.....	74
17.8 Florida Department of Environmental Protection (FDEP)	75
17.9 Required Training	75
CHAPTER 18. LANDFILL	76
18.1 Florida Administrative Code (FAC) 62-701	76
18.2 Requirements	76
18.3 Implementation	76
18.4 Inspection	76
18.5 Sampling.....	76
18.6 Records	76
18.7 FDEP	76
CHAPTER 19. BIOMEDICAL WASTE	77
19.1 Requirements	77
19.2 Implementation	77
19.3 Monitoring	77
19.4 Inspection	77
19.5 Training.....	77
19.6 Records	77
CHAPTER 20. BLOODBORNE PATHOGENS/EXPOSURE CONTROL	78
20.1 Requirements	78
20.2 Implementation	78
20.3 Exposure Control Plans	78
20.4 Training.....	78
CHAPTER 21. STORAGE TANKS	79
21.1 Regulatory Relationships	79
21.2 Documentation.....	79
21.3 Financial Responsibility	80
21.4 New Storage Tank Installations and Upgrades to Existing Tank Systems.....	80
21.5 Closures.....	80
21.6 Inspection, Monitoring, Testing and Reports.....	80
21.7 Discharge Notifications	81
21.8 Recordkeeping.....	81
CHAPTER 22. PESTICIDES	83
22.1 Documentation.....	83
22.2 Controls	83
CHAPTER 23. POLYCHLORINATED BIPHENYL (PCB) MANAGEMENT	87
23.1 Toxic Substance Control.....	87
23.2 Implementation	87
23.3 Notifications	87
23.4 Inspection	87
CHAPTER 24. RADIOACTIVE MATERIALS	88
24.1 KNPD 1860.1.....	88
24.2 KNPR 1860.1 and KNPR 1860.2	88
CHAPTER 25. ENVIRONMENTAL NOISE	89
25.1 Regulatory Relationship.....	89
25.2 Documentation.....	89
25.3 Controls	89
25.5 Monitoring	89
CHAPTER 26. REMEDIATION ACTIVITIES	90
26.1 Regulatory Requirements	90
26.2 Documentation.....	90
26.3 Modifications to Operational SWMU's.....	91
26.4 Remediation of SWMU's.....	91
26.5 Continuing Operations Within SWMU's	91
26.6 Controls	91
26.7 Training.....	92

CHAPTER 27. TOXIC SUBSTANCES AND EMERGENCY PLANNING	93
27.1 Documentation.....	93
CHAPTER 28. NATURAL RESOURCES	96
28.1 Threatened and Endangered Species	96
28.2 Coastal Zone Consistency Determination.....	97
28.3 Wetlands and Floodplains.....	97
28.4 NASA Use of Areas Managed by the U.S. Department of the Interior	98
CHAPTER 29. CULTURAL RESOURCES	99
29.1 Regulatory Relationships	99
29.2 Documentation.....	99
29.3 Controls	99
CHAPTER 30. MANAGEMENT INFORMATION SYSTEMS	100
30.1 NASA Environmental Tracking System (NETS).....	100
30.2 Training.....	100
30.3 Other Systems	100
CHAPTER 31. RECYCLING, POLLUTION PREVENTION & AFFIRMATIVE PROCUREMENT	101
31.1 Recycling	101
31.2 Affirmative Procurement	101
31.3 Pollution Prevention	101
CHAPTER 32. ENERGY MANAGEMENT	102
32.1 NASA Agency Energy Mission Statement	102
32.2 KSC Policy.....	102
32.3 Division of Responsibilities	102
TABLE - A: MATERIALS CHART	104
TABLE - B: MATERIALS NOT ACCEPTED BY RRMF	107
TABLE - C: ENVIRONMENTAL CONTROL CLAUSES FOR CONSTRUCTION CONTRACTS	108
TABLE - D: ENGINEERING REVIEW COMMENTS FORM (KSC FORM 19-21)	109

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

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 KHB 8800.6 Revision C, KSC Environmental Control.

Scott Kerr,
Director of Spaceport Services

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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”
- 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](#), "NASA Records Management"
 - (b.) [NPD 2800.1](#), "Managing Information Technology"
 - (c.) [NPD 8500.1](#), "NASA Environmental Management"
 - (2) NASA Procedural Requirements
 - (a) [NPR 1400.1](#), "NASA Directives System Procedural Requirements"
 - (b) [NPR 1441.1](#), "NASA Records Retention Schedules"
 - (c) [NPR 7120.5](#), "NASA Program and Project Management Processes and Requirement"

- (d) [NPR 8553.1](#), "NASA Environmental Management System (EMS)"
- (e) [NPR 8570.1](#), "Energy Efficiency and Water Conservation"
- (f) [NPR 8580.1](#), "Implementing The National Environmental Policy Act and Executive Order 12114"
- (g) [NPR 8621.1](#), "NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping"
- (h) [NPR 8715.2](#), "NASA Emergency Preparedness Plan Procedural Requirements"
- (i) [NPR 8715.3](#), "NASA Safety Manual"
- (j) [NPR 8850.1](#), "Environmental Investigation and Remediation – PRP Identification and Analysis"

b. KSC Issuances

- (1) Kennedy Policy Directives
 - <http://www.ksc.nasa.gov/docs/management/kmi.html>
 - (a) [KNPD 1860.1](#), "KSC Radiation Protection Program"
 - (b) [KNPD 8500.1](#), "KSC Environmental Management"
- (2) Kennedy Procedural Requirements
 - <http://www.ksc.nasa.gov/docs/management/khb.html>
 - (a) [KNPR 1860.1](#), "KSC Ionizing Radiation Protection Program"
 - (b) [KNPR 1860.2](#), "KSC Non-Ionizing Radiation Protection Program"
 - (c) [KNPR 1870.1](#), "KSC Sanitation Program"
 - (d) [KNPR 4000.1](#), "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](#), "Environmental Setting Reference Manual"
 - (b) [KSC-TA-6167](#), "Health and Safety Reference Manual"
 - (c) [KSC-TA-6168](#), "Decision Process Document for the RCRA Corrective Action Program, John F. Kennedy Space Center, Florida"
 - (d) [KSC-TA-6169](#), "Sampling and Analysis Plan"
 - (e) [KSC-TA-5889](#), "Kennedy Space Center (KSC) Dewatering Policy for Remediation Sites"
- (4) [KSC-PLN-1906](#), "KSC Energy Management Five-Year Plan"
- (5) [KSC-PLN-1911](#), "Environmental Resource Document"
- (6) [KSC-PLN-1912](#), "NASA-KSC Environmental Management System Manual"
- (7) [KSC-PLN-1913](#), "KSC Water Management Plan"

1.6 Kennedy Customer Agreements

- a. [KCA-1285](#) Environmental Management/Pollution Control
- b. [KCA-1301](#) Investigation of Environmental Contamination at CCAS and KSC
- c. [KCA-1369](#) Interagency Agreement between NASA and Florida Dept. of Environmental Protection for Oversight and Support
- d. [KCA-1619](#) Moa Between NASA Headquarters And KSC For Recycling And Affirmative Procurement Lead Center
- e. [KCA-1649](#) 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](#) Environmental Investigation And Remediation Potentially Responsible Party (PRP) Identification And Analysis
- b. [KDP-KSC-P-1728](#) KSC POLLUTION INCIDENT REPORTING (PIR) SYSTEM
- c. [KDP-P-1714](#) Annual Title V Fee Calculation
- d. [KDP-P-1715](#) Title V Annual Operating Report (AOR)
- e. [KDP-P-1726](#) Environmental Assessment (EA)
- f. [KDP-P-1727](#) Environmental Checklist (EC)
- g. [KDP-P-1730](#) Excavation Permit Application and Sitting Approval
Environmental Review
- h. [KDP-P-1733](#) Historic and Archaeological Site
- i. [KDP-P-1734](#) Environmental Permit Compliance Reporting
- j. [KDP-P-1741](#) Threatened and Endangered Species
- k. [KDP-P-1743](#) Environmental Permit Application Review and Submittal
- l. [KDP-P-1744](#) Environmental Permit Electronic Funds Transfer (EFT)
- m. [KDP-P-1745](#) Environmental Regulatory Response To Request For
Information
- n. [KDP-P-1747](#) Internal Environmental Monitoring and Compliance Inspections
- o. [KDP-P-1748](#) Regulatory Inspections

1.8 Environmental Checklists

[KDP-F-2568](#) Malfunction Report

1.9 KSC Forms (Hazardous Waste)

<http://kscforms.ksc.nasa.gov/>
https://extranet.hq.nasa.gov/nef/user/form_search_list.cfm?prefix=all
Other Forms: <http://kscforms.ksc.nasa.gov/other.cfm>

1.10 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 Spaceport Services, to fulfill the Directorate's environmental management responsibilities under [KNPD 8500.1](#).

2.10 Lead Organization (Maintenance)

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

2.3 Lead Organization (Construction)

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

2.2 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).

2.4 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.

2.1 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 Spaceport Services, responsible for fulfilling the responsibilities described in [KNPR 1870.1](#).

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. KSC ENVIRONMENTAL POLICY FOR RECLAMATION & SALVAGE

3.1 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, treated lumber, empty drums and 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. The NASA NPG 8820.3 identifies preferred approaches to pollution 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
- d. Properly dispose of whatever cannot be eliminated at its source, recycled, or treated

3.2 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.

3.3 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

CHAPTER 4. GENERAL ENVIRONMENTAL RESPONSIBILITIES

4.1 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.

4.2 Center Boards and Committees

Representing 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).

4.3 Principal Center

The NASA Environmental Program Branch (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.

4.4 Developing an Environmental Management System

The 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.

4.5 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 Environmental Program Branch (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.

4.6 External Communications

The NASA Environmental Program Branch (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.

4.7 Interpreting Regulation and Establishing Policy

The NASA Environmental Program Branch (EPB) shall be solely responsible for providing policy and guidance on environmental issues at the Kennedy Space Center. 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.

4.8 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.

4.9 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.

4.10 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.

4.11 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.

4.12 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 5. ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL ANALYSIS

5.1 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.

5.2 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 Spaceport Services Directorate. As these activities often involve impacts to the environment, a KSC Environmental Checklist 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 prior to the submittal of a sitting request, unless all "NO's" were checked for the project. 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 checklist with all marked, whichever is appropriate, for the chosen alternative should be attached to the sitting request. Refer to [KDP-P-1730](#) for the process of evaluation 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 by the EPB using information from the completed KSC Environmental Checklist. The EPB shall forward the signed AF 813 to CCAFS 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 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](#) 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 6. POLLUTION INCIDENT REPORTING AND NOTIFICATION

6.1 Regulatory Background

- a. 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.
- b. Un-permitted releases must be reported to the Environmental Program Branch (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.
- c. All un-permitted releases at KSC shall be reported using the KSC Incident Reporting and Notification Form (PIR), KSC Form 21-555 (as revised). The following are general exemptions from the reporting requirement:
 - (1) Quantity of hazardous material released is 4 ounces or less.
 - (2) Release occurs inside a facility and does not reach the outside environment.
 - (3) Release is considered a fugitive emission or is contained as a standard operating procedure (e.g., drips from disconnection of fluid lines).
 - (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.)
- d. There are four primary Federal Statutes that require release reporting:
 - (1) CERCLA Section 103 (40 CFR Part 302.6, Part 300.405) - Requires that the release of a CERCLA hazardous substance that meets or exceeds the reportable quantity (RQ) set forth in 40 CFR 302.4 must be reported to the National Response Center (NRC).
 - (2) EPCRA Section 304 (40 CFR Part 355.40) - Requires that the release of an RQ or more of an EPCRA extremely hazardous substance or a CERCLA hazardous substance (one pound or more if a reporting trigger is not established by regulation).
 - (3) CWA Section 311 (40 CFR Part 110.10, Part 300.300) - Requires that the release of oil be reported to the NRC if the release: violates applicable water quality standards; (2) causes a film, sheen or discoloration of the water or adjoining shoreline; or (3) causes a sludge or an emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.
 - (4) HMTA Section 1808 (49 CFR Part 171.15) - Requires that the release of a DOT hazardous material during transportation be reported to the NRC under certain circumstances such as death, injury, significant property damage, evacuation, highway closure, etc.
- e. Pollution Incident Release Reporting Requirements:
 - (1) At the Kennedy Space Center 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.
 - (2) In cases where the EPB cannot be reached, such as second or third shift

or on the weekend, the JBOSC Support Operations Office shall be notified at 853-5211. The Operations Officer shall notify the appropriate personnel.

- (3) 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.
- (4) Information required by the EPB for verbal notifications and for completion of KSC Incident Reporting and Notification Form (PIR), KSC Form 21-555 (as revised) is:
 - (a) Date of incident
 - (b) Time of incident
 - (c) Contact person, name and telephone number
 - (d) Location of contact person
 - (e) Substance released
 - (f) Location of the incident
 - (g) Quantity of release
 - (h) Release effects
 - (i) Incident description
 - (j) Incident cause
 - (k) Action taken to respond, contain or cleanup incident
 - (l) Health risks
 - (m) Injuries
 - (n) Personnel notified (e.g., 911, Duty Office)
- (5) Maps are especially useful when reporting petroleum spills, because the off-site notification requirement includes written notification. A map showing spill locations should be attached to the forms submitted to the EPB. The map can be a rough sketch or a facility utilization map showing compass directions, buildings, landmarks, spill location and approximate area covered by spill.
- (6) In some cases, the PIR and map may be required by the EPB more quickly than the KSC Mail System can deliver. In these cases, the OR and the responsible contractor shall be notified and required to either hand carry or electronically transmit the report to the EPB.
- (7) 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:
 - (a) Petroleum products:
 1. Brevard County, verbal, followed by written appropriate FDEP form. Maps are desirable.
 2. National Response Center, verbal, if discharged to surface waters.
 - (b) Extremely hazardous substances:
State Emergency Response Commission, verbal.
 - (c) CERCLA hazardous substances:
 1. National Response Center, verbal.
 2. State Emergency Response Commission, verbal.
 - (d) Industrial Wastewater Emergency Overflow:
FDEP, verbal, written as requested.
 - (e) Sewage releases:

- FDEP, verbal, written with next monthly report.
 - (f) Air releases of emissions exceeding permitted limits:
FDEP, verbal, followed by written report at FDEP's discretion.
 - (g) PCB's:
National Response Center, verbal.
- (8) Any sampling required at the incident site either initially or long-term follow-up shall be coordinated with the EPB. The OR shall be notified verbally and/or in writing by the EPB of the response from the off-site authorities regarding the verbal release notification.
- f. Pollution Incident Reports:
 - (1) The PIR shall be kept by the EPB. The EPB shall provide a PIR Form indicating the PIR has been reviewed by the EPB.
 - (2) Besides being an internal account of spills at KSC, the PIR is a mechanism for identifying sites requiring remediation. A detailed description of the incident on the report form is necessary to support the EPB request for funding from NASA Headquarters to investigate and remediate the site.
 - (3) 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](#) for PIR process requirements.
 - (4) PIR data is also used to support other environmental programs at KSC such as:
 - (a) Compliance and Enforcement Support
 - (b) Permit Nonconformance
 - (c) Environmental Planning
 - (d) Statistical and Trend Analysis
 - (e) Academic Research
 - (f) Property Transfer/Site Audits
 - (g) Remediation

CHAPTER 7. SPILL PREVENTION, CONTROL AND COUNTERMEASURES PLAN

7.1 About the Program

- a. The Kennedy Space Center Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) documents the procedures for the prevention, response, control, and reporting of spills of oil at KSC) Florida. 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.
- b. 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.
- c. A full copy of the SPCC Plan is maintained at the NASA Environmental Program Branch (EPB) and is available to the Environmental Protection Agency (US EPA) Regional Administrator for on-site review during normal working hours.
- d. 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.

7.2 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.

7.3 Objective and Scope

This 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.

This 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.

7.4 Plan Organization

This 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 8. PERMITTING AND COMPLIANCE

8.1 Permit Application Review and Submittal

- a. Permit Responsibility:
When a Record of Environmental Consideration (REC) is returned with a requirement for a permit, the initiating organization is responsible for preparing the permit application, including signing and sealing, when required. The EPB may be contacted for guidance concerning preparation of the application. The EPB is responsible for reviewing and submitting permit applications to the appropriate regulatory agency. The environmental permit application review and submittal process can be found on [KDP-P-1743](#).
- b. Regulatory Agencies' Response:
Florida regulatory agencies' response to a permit application can be either a notice of completeness or a request for additional information (RAI). After additional information is provided (reference [KDP-P-1745](#)), the Agency may continue to ask additional questions until the permit application is considered complete by the Agency.
- c. Indicate Intent:
After the permit application is deemed complete, the regulatory agency must indicate intent to issue the permit (or in the case of St. Johns River Water Management District, arrange for a governing board review). Typically, a draft permit is received within a 14-day turnaround period for comments to the Agency. EPB shall send the draft permit to the lead OR upon receipt. When comments are resolved, typically, 30 days is required to advertise the permit issuance in a local newspaper, for the regulatory agency to sign the permit, and for EPB to receive the permit through the mail.
- d. Permit Conditions:
After a permit is received, the EPB shall forward a copy to the lead OR. The OR is responsible for ensuring the permit is available to the office managing construction or operation and ensuring compliance with the permit. The OR is responsible for ensuring all applicable special and general conditions of the permit are included in the work package or construction contract; for notifying the EPB when work begins and ends; and for ensuring completion of any "Certificate of Completion" and as-built drawings required as a condition of the permit. For operational or maintenance conditions of permits, the organization conducting the operation or maintenance shall comply with all the terms of the permit, coordinating with and arranging for monitoring support by the EPB, keeping the OR informed of any change in the operation which could require permit modification, and preparing permit modification packages.
- e. Permit Modifications:
The EPB should be contacted for determination of whether a modification is considered major or minor. The lead OR is responsible for forwarding permit modification packages to the KSC EPB. Major permit modifications shall be reviewed and processed like a new permit (see [KDP-P-1743](#)). Minor permit modifications may be handled with a notice to the regulatory agency or through submission of the as-built in the Certcomp.
- f. Certification of Completion:
After work is complete, the lead OR shall notify the EPB and, within the

timeframe indicated in the permits, transmit a completed Certcomp with as-built, as needed. The EPB shall review the Certcomp, submit it to the regulatory agency, and arrange a regulatory agency inspection, if required. If a regulatory agency inspection reveals discrepancies in the permitted work, the EPB shall notify the OR, who shall arrange to have the discrepancies corrected or explained. If a Certcomp cannot be developed within the timeframe indicated in the permit, a request for extension must be processed through the EPB.

- g. Operation Permits:
Preparation of operation permit applications shall be the responsibility of the organization conducting or scheduled to conduct the permitted operation. When operation permits follow completion of construction permits, the organization preparing the design shall serve as lead organization and ensure construction permit is available to and coordinated with the operations organization. Following construction, the operation organization shall become the lead organization. When operation permits are independent of any construction permit, the operations organization shall serve as lead organization for the preparation of the application.
- h. Turnover of Permitted Facilities and Systems:
Permitted facilities and systems shall be transferred to the operations and maintenance organizations as agreed between affected KSC organizations.
- i. Permit Renewals:
Permit renewal applications must be submitted to the EPB through the lead OR in the timeframe required by the applicable regulation prior to the permit expiration date. The development and transmittal of the application shall be the same as for new permit applications. The organization responsible for the permitted system shall be considered the lead organization for permit renewals.
- j. Permit Fees:
The EPB shall request permit fees to be paid from funds budgeted and funded by EPB except for exceptionally large fees (>\$5000). Such fees shall be paid for by the organizations requesting new facilities or operations. KSC tenants shall provide the fee to the EPB in the form of a check payable to the external agency processing the permit. A list of permit fees is available from each agency or from the EPB. (See [KDP-P-1744](#) for permit fee payment process.)
- k. Violations of Permit Conditions:
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 OR is responsible for ensuring procedures have been developed to ensure compliance with permit requirements within their organization. All designated OR are responsible for reporting apparent permit violations to the lead organization OR and 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.

8.2 Inspection, Monitoring, Testing and Reporting

- a. Inspection
 - (1) Regulatory Agencies:
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 regulators may give verbal or written notice of an impending

inspection or the inspection may be unannounced. The EPB shall be the point-of-contact and shall accompany the regulator at all times while on KSC property. The lead OR or a representative responsible for the permitted facility being inspected should also attend the inspection. Refer to [KDP-P-1748](#) for the regulatory inspection process.

- (2) **Permits and Regulations:**
Permits and regulations list specifically which records the regulators shall inspect. To assure compliance with the permit, regulators can also perform sampling or monitoring on any substance or parameter at any KSC facility.
- (3) **On-Site Inspections:**
On-site inspections by regulators may also be required before a permit is issued. Again, the EPB, and the OR, or a representative shall accompany the regulator at all times.
- (4) **Implementation:**
The EPB shall be responsible for implementing an internal inspection program for KSC. Schedules for internal inspections depend upon staffing constraints. 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.
- (5) **Inspection Findings:**
Inspection findings are provided to operational personnel and the OR. In general, permitted facilities where routine monthly or quarterly monitoring is performed are not inspected unless the monitoring shows cause for concern.
- (6) **Other Facilities or Activities:**
Other facilities or activities, which are inspected annually by regulators, shall be inspected internally either annually prior to the regulator's inspection or every six months to ensure the facilities are in compliance. Examples include storage tank inspections and air emission unit inspections. Requirements for internal inspections may also be triggered by consent orders or unannounced inspections by regulators that expose areas of concern. Checklists used for internal inspections are provided in the applicable program area section of this KHB.
- (7) **Routine Inspections:**
Routine inspections of facilities or operations are **to be** performed by the facility manager or qualified operational personnel. Requirements for routine inspections and recordkeeping are specified in regulations. 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.
- (8) **Guidance for Inspection:**
Guidance on the inspection requirements is available from the EPB. Refer to [KDP-P-1747](#) for the internal inspection process.

b. Monitoring

- (1) Environmental monitoring of operational areas at KSC is performed to determine if operations currently have or in the past have had adverse effects on the surrounding environment.
 - (2) General and specific conditions listed in all permits give instructions on required monitoring for the permitted source. Monitoring unique to permit types is explained in the corresponding section of this KHB. Permit-related sampling and analysis is performed by the EPB Sampling Contractor or designated representative. Monitoring results are transferred to appropriate forms and transmitted to the operator. The OR or representative is responsible for reviewing the data provided by the Environmental Sampling Contractor or operational personnel to ensure no transcription errors have occurred. The OR 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 OR should consult with the EPB to determine if an investigation or further sampling is required.
 - (3) When monitoring reports require an "Operator" or "authorized company official" signature, a designated NASA employee shall sign the report. When the report requires an "owner or authorized representative signature," the Chief EPB shall sign. In no case shall a contractor employee sign as Operator or owner unless the signature of a licensed operator is required as in the case of the Wastewater Treatment Facilities and the Drinking Water Treatment Plant. In those cases, the licensed operator shall sign the monitoring reports.
- c. 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.
- d. Reports
- (1) All required reports of monitoring results shall be submitted to regulatory agencies through the EPB. The OR 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 OR 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 OR. Refer to [KDP-P-1734](#) for the permit compliance reporting process.
 - (2) Any reports of testing results should be maintained on-site and a copy forwarded to the EPB through the OR for submittal to the proper agency, if required.
 - (3) The EPB shall track permits requiring monitoring submittals and track dates that the reports were submitted. The EPB shall notify OR's 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 9. AIR POLLUTION

9.1 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.

9.2 Documentation

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

9.3 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 emission unit, an application must be submitted to the EPB by the OR signed and sealed in accordance with Section 6 under Permit Application Review and Submittal.
- (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 an 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, an application must be submitted to the EPB by the OR signed and sealed in accordance with Section 6 under Permit Application Review and Submittal.
 - (b) The emission units with construction permits shall be incorporated into the Title V Operating Permit. The incorporation shall be accomplished by submitting an application to modify the overall permit. 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 database. The OR is responsible for coordinating the submittal to the EPB of the data necessary to keep the database 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 are complied with, as they pertain to the Ozone Depleting Substances.

(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.

9.4 Inspection, Monitoring, Testing and Reporting

- a. Refer to Chapter 6 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.

d. Reporting:

- (1) In addition to the requirement to submit monitoring reports, permits are required 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](#) for the Fee Calculation process and to [KDP-P-1715](#) 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 10. WATER POLLUTION

10.1 Regulatory Relationships

The Rivers and Harbors Act of 1899, as amended, and the 1977 amendments (Clean Water Act) to the Federal Water Pollution Control Act require permits and place restrictions on actions in federal waterways and wetlands. The Clean Water Act requires federal facilities to comply with all federal, state, interstate and local pollution control requirements. Federal permit regulations have been promulgated by the U.S. Army Corps of Engineers (COE) with EPA oversight. Florida pollution control statutes delegate pollution prevention control to the Florida Department of Environmental Protection (FDEP). The FDEP has promulgated regulations which require permits for domestic wastewater systems and industrial wastewater discharge. Regulation of surface water management systems and dredge and fill permitting are implemented under the Environmental Resource Permit (ERP) Program, which is shared jointly by FDEP, COE, and the St. Johns River Water Management District (SJRWMD).

10.2 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.

10.3 Documentation

Permit application and processing shall be as described under Section 6, General Procedures. Permit requirements specific to water pollution prevention are as follows:

- a. Environmental Resource Permits:
 - (1) An ERP is required for any work that creates new impervious and/or semi-impervious surfaces with some limited exceptions. Existing impervious areas without surface water management systems must be upgraded to current treatment standards and re-permitted when modified beyond certain parameters. All ERP's requiring the construction of a surface water management system must be reviewed and concurred by Operator or maintenance entity. Inspection reports required of the Operator by the permit shall be prepared by the OR and submitted to the EPB in sufficient time to meet the required submittal date.
 - (2) An ERP is also required for any work disturbing a wetland or waterway including drainage ditches (other than maintenance dredging in drainage ditches). Wetland impacts are currently under the permit jurisdiction of the COE, the FDEP, and the SJRWMD depending on wetland type and jurisdictional definition. Due to agreements between these agencies, one permit application shall usually suffice for all dredges and fill requirements. However, two separate permits shall be issued and construction may not start until both are received approved. In accordance with a Memorandum of Understanding between FDEP and

SJRWMD, all dredge and fill permits shall be submitted to SJRWMD except those associated with primarily industrial or domestic wastewater projects, or other types of projects permitted by FDEP. The applicant shall in all cases be the Chief of the EPB. Typically, there is no Operator for dredge and fill permits, however, when wetland creation is required as mitigation for wetland impacts, a maintenance organization must be identified as part of the mitigation plan. Refer to [KDP-P-1743](#) for the Environmental Permit Application Review and Submittal process.

- b. Domestic Wastewater Permits:
 - (1) Permits are required by the FDEP for modifications, additions and tie-ins to sewage lift stations, domestic wastewater treatment facilities and domestic wastewater collection systems. The OR for the project design organization shall complete a permit application and all supporting data completed and forwarded to the EPB. The applicant shall in all cases be the Chief of the EPB. The operating organization shall, in all cases, be the Chief of Operations of Spaceport Services and all domestic wastewater permits must be reviewed and signed or concurred by the Chief of Operations of Spaceport Services as Operator or Maintenance entity.
 - (2) For domestic wastewater treatment facilities permits, a monthly operating report is required. The operating report shall be prepared by the operating organization and submitted through the organization OR to the EPB in sufficient time to meet the required submittal date. New sewage treatment plant permits and renewals of existing domestic wastewater treatment facilities permits must address wastewater reuse as part of the application. Reuse of domestic wastewater is required by Florida law unless it is economically, technically or environmentally unfeasible. New or renewal permit applications for domestic wastewater treatment facilities must include a wastewater reuse plan or show that reuse is not feasibility.
- c. Industrial Wastewater
 - (1) The Federal Water Pollution Control Act Amendments of 1972 and the FAC require all organizations whose activities involve the generation or disposal of industrial wastewater to maintain appropriate facilities, systems, and controls for the safe management of all operations. Permits are required for any process discharging wastewater to ground or surface waters and for any recycling process that has a potential for overflow or leakage to ground or surface waters. Monitoring and reporting are usually required as conditions of these permits.
 - (2) New permit applications and renewals must address the potential for reuse, alternative methods of disposal, or source elimination of the wastewater discharge as part of the permit application. If a permit cannot be obtained from the FDEP for a wastewater discharge, the wastewater must be disposed of as controlled or hazardous.
- d. Septic Tank Permits
 - (1) Septic tanks are to be installed only when no other reasonable alternative to sewage disposal for a project exists. The lead organization shall provide a completed application form to the EPB. The EPB shall notify the OR that the permit has been submitted to Brevard County Environmental Health, which has been given jurisdiction by the Florida Department of Health. Permitting for these facilities is different than the normal permit processing, because several inspections are held during

- the construction process.
- (2) Once the permit is received, construction may begin. Upon completion of construction of the system, including connection of the water supply to the structure, the OR shall contact the EPB who shall contact the County for the final inspection. A representative for the EPB must be present for all inspections. Upon installation, the OR shall ensure the system is maintained properly. Unless otherwise provided for, the Director of Spaceport Services shall be responsible for the operation and maintenance (O&M) of all septic tanks installed on KSC property and NASA facilities on CCAFS. The OR must ensure O&M support is available as a part of the permit coordination process. Permitted septic tanks are required to submit operation permit applications on an annual basis.
- e. Construction Dewatering
- (1) Documentation
A Consumptive Use Permit from the St. Johns River Water Management District is required for all construction dewatering if the maximum estimated daily pumping exceeds 300,000 GPD or duration is greater than 30 days. If all dewatering effluent is retained on-site, the system is exempt from permitting requirements. If retention on-site is not feasible, the OR must prepare a Consumptive Use notification using form RDS-50 in accordance with WMD 40C-2. KSC has a General Construction Dewatering Permit, however, the RDS-50 must be submitted which describes the project and duration. The amount of water pumped must be calculated so that the total gallonage at KSC can be submitted to St. Johns when requested by the Agency.
 - (2) Controls
The OR must ensure a permit package is developed in accordance with the requirements of WMD 40C-2 or ensure all dewatering effluent is retained on-site. Preference should be given to retention of water on-site. Retention on-site can include creation of a bermed temporary retention area to allow effluent to percolate back into the groundwater or overland sheet flow of the effluent so it does not flow into drainage ditches or waterways. The EPB shall review effluent retention plans upon request of the OR.
- f. National Pollution Discharge Elimination Systems (NPDES) Permits
- (1) Regulatory Relationships
 - (a) The 1987 amendments to the Clean Water Act require NPDES permits for stormwater discharges associated with industrial activity. In November 1990, EPA issued regulations establishing permit application requirements for these activities including construction activities.
 - (b) The permit requirements for industrial activities and construction projects are different in both timing and content.
 - (2) Documentation
 - (a) The Clean Water Act requires any discharge to waters of the United States be permitted under the NPDES. This applies to both point and non-point discharges such as stormwater outfalls.
 - (b) KSC has one NPDES permit for point source discharges and one permit for stormwater discharges. The permit application

requirements for point source discharges shall be submitted concurrently by the OR with the applications for State permit for these discharges. This data shall then be used by the EPB to modify the existing NPDES permit, as required.

CHAPTER 11. WATER CONSERVATION AND CONSUMPTIVE USE

11.1 Water Conservation

Water conservation is the responsibility of all personnel at KSC. Whether a resident or visitors 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, regarding facilities and operations under their responsibility, 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 Environmental Program Branch (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](#)

11.2 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.

11.3 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.

11.4 Dewatering Operations

Dewatering activities at the Kennedy Space Center 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. It is important to note that the consumptive use regulations do not address water quality issues associated with contaminated sites or possible discharge of pollutants to waters of the state. This issue is addressed in the Industrial Wastewater and Remediation sections.

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 Attachment B. 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 Chief of the NASA Environmental Program Branch 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.

11.5 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 Chief of the NASA Environmental Program Branch 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.

11.6 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.

11.7 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 12. DRINKING WATER

12.1 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, boosted 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.

12.2 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.

12.3 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.

a. Responsible Organization

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 (62-555, FAC), 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 (62-555.520, FAC).

b. FDEP Approval

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;

c. FDEP notification

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;

d. FDEP involvement not required

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.

e. **Contacting Regulatory Agencies**

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.

12.4 Water Conservation and Reuse

The OR for each KSC organization shall ensure water conservation measures are instituted within each KSC organization. All new projects must be reviewed to ensure water usage is minimized and reuse of wastewater is accomplished, where feasible. Retrofitting of existing water usage shall be initiated to the extent required by regulation. The EPB shall ensure OR's are advised of current regulations for water conservation and reuse.

12.5 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. 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

- b. 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.

- c. General Permit Exclusions:
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
- d. 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.

e. 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 Chief of the NASA EPB 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.

f. 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 Form 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 13. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

13.1 About the Program

National Pollutant Discharge Elimination System (NPDES) 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 (DEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Country lands). DEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes (F.S.). As the NPDES stormwater permitting authority, DEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities.

13.2 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.

13.3 Stormwater

The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial, and construction activities. Operations at KSC must meet the NPDES requirements for industrial and construction activities.

13.4 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., and "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).

a. Permit Number FLR05F574

The NASA EPB has obtained a permit (Permit Number FLR05F574) under this program to cover operations at the following facilities:

- (1) Transfer, Storage, and Disposal Facility (TSDF) - Sector K. Hazardous Waste Treatment Storage or Disposal Facilities
- (2) Ransom Road Recycling Yard - Sector N. Scrap Recycling Facilities

- (3) Contractor's Road Locomotive Yard - Sector P. Land Transportation
- (4) Shuttle Landing Facility - Sector S. Air Transportation Facilities
- (5) Visitors Center Bus Maintenance Facility - Sector P. Land Transportation

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 these facilities to develop and implement a Stormwater Pollution Prevention Plan 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).

13.5 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.

13.6 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.).

- a. Notice of Intent
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.
- b. Processing Fees
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.
- c. Contacting Regulatory Agencies
All correspondence with regulatory agencies regarding the Kennedy Space Center 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 Environmental Branch (TA-C3).
- d. Stormwater Pollution Prevention Plan
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.
- e. NOI Maintenance
- 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.

12.7 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 Chief of the NASA Environmental Program Branch 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 and fee. The NASA EPB shall forward the acknowledgement letter to the initiating organization.

CHAPTER 14. STORMWATER

14.1 About the Program

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.

The Kennedy Space Center (KSC) has over eighty 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.

14.2 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 Joint Base Operations Support Contractor (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.

- a. Regulatory Permitting
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:
- b. Construction Permits

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.
- c. A permit is required for alteration, removal, reconstruction, or abandonment of existing stormwater management systems.
- d. Impacts to wetlands or surface waters, as defined by state and Federal agencies.
- e. Contacting Regulatory Agencies
All correspondence with regulatory agencies regarding work at the Kennedy Space Center 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 Environmental Branch (TA-C3).

14.3 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 Chief of the NASA Environmental Program Branch 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.

14.4 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.

14.5 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 15. DOMESTIC WASTEWATER

15.1 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 Joint Base Operations Support Contractor (JBOSC) is responsible for maintaining the domestic wastewater treatment systems at KSC.

15.2 Wastewater Discharges

Discharges into the JBOSC maintained domestic wastewater treatment systems shall comply with Code of Federal Regulations (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.

15.3 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.

- a. Onsite Sewage Treatment and Disposal Systems
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
- b. Installation of Permanent Systems
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.

15.4 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 Servicer shall add the location to the normal route for servicing.

15.5 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 SGS 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 SGS 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.

15.6 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.

a. Collection System Permit Exclusions

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.

b. Contacting Regulatory Agencies

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.

15.7 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

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.

b. Individual Permit

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 (≥ 10 EDUs) or \$300 (< 10 EDUs) 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.

c. 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 Chief of the NASA EPB 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 Form 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 16. INDUSTRIAL WASTEWATER

16.1 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.

16.2 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.

Some discharges of industrial wastewater have Best Management Practices (BMPs) associated with them which are provided in KSC-PLN-1913 (KSC Water Management Plan).

16.3 Industrial Wastewater Discharge Authorization

The Joint Base Operations Support Contractor (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 Code of Federal Regulations (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.

16.4 Enforcement

Enforcement actions for illegal discharges to the Domestic Wastewater Treatment System are described in the Section titled, "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.

16.5 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 the Kennedy Space Center 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.

16.6 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 Chief of the NASA EPB 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, a "Request for Letter of Release to Place Water Supply System into Service" [the Department Form 62-555.900(9), F.A.C.], a copy of the Notification letter, and 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 Notification letter.

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.

16.7 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.

16.8 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.

16.9 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 17. HAZARDOUS AND CONTROLLED WASTE

17.1 Hazardous Waste Management (HWM)

At KSC, the Spaceport Services Directorate is responsible for implementation of a Hazardous, Controlled, and Solid Waste Management Program. The Joint Base Operations Support Contract (JBOSC) is responsible for general and specific waste management procedures. This includes training, accumulation, storage, and contingency plan requirements for hazardous, controlled, and solid waste, and industrial and domestic wastewaters.

17.2 Universal Waste (UV)

Provides for certain widely generated hazardous wastes that can be collected and managed under streamlined requirements found in 40 CFR 273 and Chapters 62-730 and 62-737, FAC, and are also known as Universal Wastes (UW). Waste streams currently included 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, and has EPA authorization to add waste streams to universal waste management handling standards.

17.3 The Resource Conservation and Recovery Act (RCRA)

RCRA provides cradle-to-grave control of hazardous and solid waste by establishing management requirements on generators and transporters of hazardous waste and on owners and operators of hazardous waste Treatment, Storage, and Disposal Facilities (TSDF). In Florida, the FDEP is delegated authority to implement most sections of RCRA and rules are listed in Florida Administrative Code (FAC) 62-730.

17.5 Treatment, Storage, and Disposal Facilities (TSDF)

KSC has a permitted TSDF and the application for permit renewal shall be prepared by the operating organization per requirements in the FAC and Chapter 8 of this document.

17.6 Environmental Program Branch (EPB)

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

17.7 EPB Responsibilities

The 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 semi-annually. When compliance concerns are identified, the operational organization shall be responsible for corrective action. Inspection includes review of required records in addition to the site visits.

17.8 Florida Department of Environmental Protection (FDEP)

The FDEP shall inspect the TSDF on an annual basis and can conduct unannounced inspections of other areas at any time.

17.9 Required Training

All required training shall be provided to employees by their respective organizations. Training records must be readily available to inspectors.

CHAPTER 18. LANDFILL

18.1 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 operates 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.

18.2 Requirements

At KSC, the Spaceport Services Directorate implements requirements associated with the management of the landfills. Refer to the Joint Base Operations Contract (JBOSC) for general, and specific solid waste management procedures.

18.3 Implementation

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.

18.4 Inspection

The EPB shall inspect the landfills on a quarterly 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.

18.5 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.

18.6 Records

Records required by FAC 62-701 and permit-specific conditions shall be inspected on a quarterly 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.

18.7 FDEP

The FDEP shall inspect the landfills on a quarterly basis. Representatives from EPB, NASA Facilities, and the landfill operator shall attend the inspection.

CHAPTER 19. BIOMEDICAL WASTE

19.1 Requirements

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

19.2 Implementation

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

19.3 Monitoring

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

19.4 Inspection

EPB shall inspect on a quarterly 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.

19.5 Training

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

19.6 Records

Records required by FAC 64E-16 shall be maintained by the contractor and monitored by the EPB on at least a quarterly 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 20. BLOODBORNE PATHOGENS/EXPOSURE CONTROL

20.1 Requirements

The Occupational Safety and Health Administration require 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 Code of Federal Regulations (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.

20.2 Implementation

At KSC, the Occupational Health Branch establishes requirements for the Bloodborne Pathogen and Exposure Control Programs. Refer to [KBM-PL-1.4](#) for the NASA Bloodborne 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.

20.3 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.

20.4 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 21. STORAGE TANKS

21.1 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 62-761 and 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.

21.2 Documentation

- a. Storage Tank Listing
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.
- b. Registration
 - (1) Requirements for registration of storage tanks with the FDEP are listed in FAC 62-761 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 on the tank survey forms, even if a current exemption exists.
 - (2) All storage tanks at construction sites, including wheeled mobile tanks or tanks on skids, must be identified to the EPB if the tank shall be on-site for longer than 180 days. The OR responsible for the construction site must notify EPB within 15 days of the placement of the tank. The OR shall also inform the EPB when the tank is taken off-site. As with all tank sites, the tank site must have containment sufficient to avoid contamination of soils under the tank. A tank on skids which remains in place for more than 180 days is not considered to be a mobile tank. If the tank meets other requirements for registration, such as size and use of the contents, then the tank shall be registered with the FDEP by the EPB.
 - (3) 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.

- (4) 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.
- (5) The EPB shall make the required notifications, as required by FDEP, with input from the OR.

21.3 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.

21.4 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 outlined in the REC.

21.5 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

21.6 Inspection, Monitoring, Testing and Reports

a. Inspections

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 EPB.

b. Compliance Monitoring

- (1) Monitoring requirements for tank systems are listed in FAC 62-761/762. The person performing the monitoring should maintain logs of all monitoring activities. At KSC, monitor 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. The dispensers at vehicular fuel stations shall be examined monthly for any visible leakage. Any leakage shall be reported to the EPB and 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. Aboveground tank systems shall be inspected weekly by facility managers or authorized personnel.
- (2) 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 normally 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.
- (3) 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 stream. 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.

21.7 Discharge Notifications

Any spill, overflow or other discharge of a regulated substance from a storage tank system at KSC shall be reported per requirements in Chapter 6 of this KHB.

21.8 Recordkeeping

- a. 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.
- b. 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 22. PESTICIDES

22.1 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.

22.2 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 KHB.
- 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 Spaceport Services Directorate 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 23. POLYCHLORINATED BIPHENYL (PCB) MANAGEMENT

23.1 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.

23.2 Implementation

At KSC, the Spaceport Services Directorate 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.

23.3 Notifications

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

23.4 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 a semi-annual basis. When compliance concerns are identified, the operational organization shall be responsible for corrective action. Besides a physical inspection of PCB items, the inspections shall include a review of required records, in particular, 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 timeframes for disposal.

CHAPTER 24. RADIOACTIVE MATERIALS

24.1 KNPD 1860.1

[KNPD 1860.1](#) (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, KMI 1150.24 and KMI 1860.1, and KHB 1860.1 and KHB 1860.2. Reference the most current version of KMI 1860.1 for more detailed instruction concerning authorities, definition, responsibilities, general provisions, applicable documents, the summations, implementation, and functions.

24.2 KNPR 1860.1 and KNPR 1860.2

[KNPR 1860.1](#) (KSC Ionizing Radiation Protection Program), and [KNPR 1860.2](#), ([KSC Non-Ionizing Radiation Protection Program](#)) details policy, administrative direction, organizational guidance, and procedural requirements of the NASA/Kennedy Space Center 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 25. ENVIRONMENTAL NOISE

25.1 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.

25.2 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.

25.3 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.

25.5 Monitoring

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

CHAPTER 26. REMEDIATION ACTIVITIES

26.1 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).

26.2 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 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 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.

26.3 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.

26.4 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.

26.5 Continuing Operations Within SWMU's

Within SWMU's, once a site is identified as a SWMU, the responsible KSC organization shall conduct a review of all ongoing and new operations to ensure there are no releases to the environment and provide this review to EPB. The EPB shall review the report, approve the action taken and provide guidance on training requirements and protective equipment. Any contamination resulting from operations after this review shall be identified to EPB for reporting to the EPA. The responsible KSC organization shall be required to clean up any contamination resulting from releases after this review.

26.6 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; develop funding through Environmental Compliance and Regulation budget; and the selection and management of cleanup contractors.

26.7 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 27. TOXIC SUBSTANCES AND EMERGENCY PLANNING

27.1 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 be 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 28. NATURAL RESOURCES

28.1 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 Review ([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.

28.2 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](#)).

28.3 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.

28.4 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 Spaceport Services Directorate.

CHAPTER 29. CULTURAL RESOURCES

29.1 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.

29.2 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).

29.3 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 30. MANAGEMENT INFORMATION SYSTEMS

30.1 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.

30.2 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.

30.3 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 31. RECYCLING, POLLUTION PREVENTION & AFFIRMATIVE PROCUREMENT

31.1 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. Programs. Recycling Programs are implemented by the Spaceport Services Directorate. Spaceport Services 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.
- c. 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.

31.2 Affirmative Procurement

- a. All KSC organizations are responsible for compliance with EO 13101. In addition, KSC organizations should comply with NPG 8830.1, "Affirmative Procurement Plan for Environmentally Preferable Products." EPB shall maintain current versions of these documents.
- 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.

31.3 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 32. ENERGY MANAGEMENT

32.1 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.

32.2 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).

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

TABLE- A: MATERIALS CHART

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	<ul style="list-style-type: none"> *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	<ul style="list-style-type: none"> *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 	<ul style="list-style-type: none"> *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	<ul style="list-style-type: none"> *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	<ul style="list-style-type: none"> *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 & mechanically rendered useless for anything but scrap *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	* 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 term for a variety of waste containing electronic components)	*Any hazardous materials must be removed – e.g. mercury, PCBs, etc. – and certified as such *KSC Form 7-49 or equivalent	*Protect from rainfall	

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			
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	
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: <ul style="list-style-type: none"> • 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) 	Process Waste Questionnaire/Technical Response Package (PWQ/TRP)

**TABLE – C: ENVIRONMENTAL CONTROL CLAUSES FOR CONSTRUCTION
CONTRACTS**

Model clauses to be included in contracts are found on the NASA KSC Procurement Office home page (<http://www.ksc.nasa.gov/procurement>). These clauses include environmental clauses, which should be used as applicable to the project.

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

ENGINEERING REVIEW COMMENTS			
<input type="checkbox"/> DESIGN <input type="checkbox"/> CRITERIA <input type="checkbox"/> MSC <input type="checkbox"/> FINAL <input type="checkbox"/> AFTER _____%REVIEW _____ <div style="text-align: right; font-size: small;"><i>(Office Symbol)</i></div>			
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)