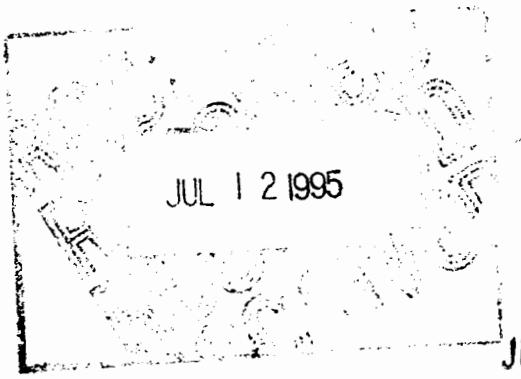
National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Drawer MM
Las Cruces, NM 88004



Reply to Attn of: RA

JUL 11 1995

New Mexico Environment Department
Attn: Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, NM 87502

Subject: Permit Modification Request for Permit No. NM8800019434-1

The NASA White Sands Test Facility request for a Hazardous Waste Operating Permit Modification for Permit No. NM8800019434-1 is submitted for your review. As requested by Phillip Solano, the submittal consists of three enclosures. Enclosure 1 addresses the NASA proposed permit modifications since the effective date of the permit. To aid in review, the existing permit text to be modified is shown as strike out and the text which is proposed for inclusion in the permit is shaded. Enclosure 2 provides the rationale for the major permit modifications. Enclosure 3 provides a copy of edited pages that can be inserted into the existing permit. Enclosures 1 and 3 are provided in both hard copy and on disk (WordPerfect 5.1).

If you have any comments or questions, please call David Amidei at (505) 524-5517.

G. E. McCright
Manager

3 Enclosures

ENCLOSURE #1

PROPOSED MODIFICATION TO HAZARDOUS WASTE OPERATING PERMIT NUMBER 8800019434-1

RESOURCE CONSERVATION AND RECOVERY ACT

HAZARDOUS WASTE FACILITY OPERATING PERMIT

FOR THE

US NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

WHITE SANDS TEST FACILITY

REVISED JUNE 1995

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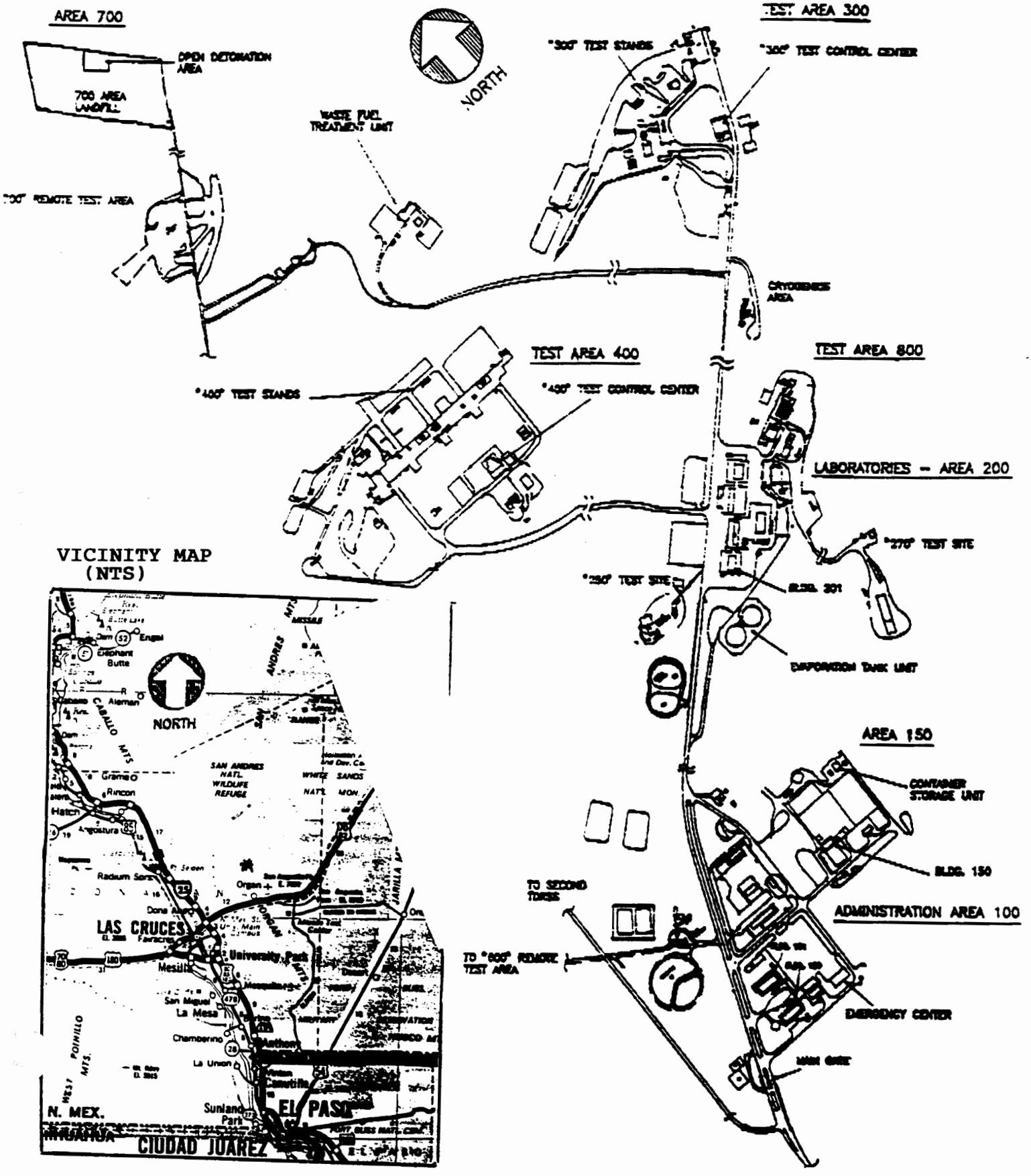
WHITE SANDS TEST FACILITY

SITE LOCATION MAP
(Not to Scale)



VICINITY MAP
(NTS)

MODULE I - GENERAL PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is allowed to store, treat and dispose on site hazardous waste in accordance with the conditions of this Permit. Any storage, treatment and disposal of hazardous waste requiring a Permit under the New Mexico Hazardous Waste Regulations (HWMR-6), Part V and not specifically authorized in this Permit is prohibited. Subject to HWMR-6, Part IX, § 270.4, compliance with this Permit generally constitutes compliance, for purposes of enforcement, with the New Mexico Hazardous Waste Act (§§ 74-4-1 et seq.. NMSA 1978) and HWMR-6, Parts I, II, III, and IV to the extent the requirement of those Parts are applicable. The Permittee must also comply with all applicable self-implementing provisions imposed by the Resource Conservation and Recovery Act (RCRA) or HWMR-6, Part VIII. A complete (RCRA) permit consists of this Permit and a U.S. EPA Permit issued under the provisions of the Hazardous and Solid Waste Amendment of 1984 (HWSA) which addresses the portion of the RCRA program for which the State is not authorized. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought by Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health and the environment (HWMR-6, Part IX, §§ 270.4 and 270.30(g)).

I.B. PERMIT ACTIONS

I.B.1. Permit Modification, Revocation and Reissuance, and Termination

This Permit may be modified, revoked and reissued, or terminated for cause, as specified in HWMR-6. Part IX, §§ 270.41, 270.42, and 270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition. (HWMR-6, Part IX, §§ 270.4(a) and 270.30(f)).

I.B.2. Permit Renewal

I.B.2 a. This Permit may be renewed as specified in HWMR-6, Part IX, 270.30(b) and Permit Condition I.E.2. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations (HWMR-6, Part IX, § 270.30(b)).

I.B.2.b. This Permit shall be reviewed by the Secretary five years after Permit issuance for any unit having land disposal aspects. Modifications shall be made by the facility as required by the Secretary and in accordance with HWMR-6, Part IX, § 270.50(d).

I.C. SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby (HWMR-6, Part X, § 1004).

I.D. DEFINITIONS

For purposes of this Permit, terms used herein are defined for each module. Terms found in Module I shall have the meaning defined in HWMR-6, Part I, § 260.2, unless this Permit specifically provides otherwise. Terms found in Module II through VI shall have the meaning defined in HWMR-6, Part I, § 260.10, unless the Permit specifically provides otherwise. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. "Secretary" means the Secretary of the New Mexico Environment Department (NMED), a designee or authorized representative. "Regional Administrator" means the Regional Administrator of the U.S. Environmental Protection Agency (U.S. EPA), Region 6, a designee or authorized representative. "Permittee" means the U.S. Army, White Sands Missile Range (Owner) and the National Aeronautics and Space Administration (NASA), White Sands Test Facility (Operator), Dona Ana County, New Mexico, EPA I.D. Number 8800019434.

I.E. DUTIES AND REQUIREMENTS

I.E.1. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit. Any Permit noncompliance, other than noncompliance authorized by an emergency Permit constitutes a violation of RCRA and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application (HWMR-6, Part IX, § 270.30(a)).

I.E.2. Duty to Reapply

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least 180 days prior to Permit expiration (HWMR-6, Part IX, §§ 270.10(h), 270.30(b)).

I.E.3. Permit Expiration

Pursuant to HWMR-6, Part IX, § 270.50, this Permit shall be effective for a fixed term not to exceed ten years. As long as NMED is the Permit-issuing authority, this Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete application (see HWMR-6, Part IX, §§ 270.10, 270.13 through 270.29) and, through no fault of the Permittee, the Secretary has not issued a new Permit (HWMR-6, Part IX, § 270.51).

I.E.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee, in an enforcement action that it would have been necessary, to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit (HWMR-6, Part IX, § 270.30(c)).

I.E.5. Duty to Mitigate

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to

prevent significant adverse impacts on human health or the environment (HWMR-6, Part IX, § 270.30(d)).

I.E.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment, control, and related appurtenances which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit (HWMR-6, Part IX, § 270.30(e)).

I.E.7. Duty to Provide Information

The Permittee shall furnish to the Secretary, within a reasonable time, any relevant information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this Permit (HWMR-6, Part V, § 264.74(a), and Part IX, § 270.30(h)).

I.E.8. Inspection and Entry

Pursuant to HWMR-6, Part IX, § 270.30(i), the Permittee shall allow the Secretary, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, inspection and entry privileges authorized by Permit Condition I.E.8.a. through I.E.8.d.

I.E.8.a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit.

I.E.8.b. Have access to and copy, at reasonable times,

any records that must be kept under the conditions of this Permit.

I.E.8.c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit.

I.E.8.d. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location. The Permittee shall be provided the opportunity to obtain split or duplicate samples.

I.E.9. Monitoring and Records

I.E.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be described in Permit Attachment II-1, the Waste Analysis Plan, or be approved by the Secretary. Analytical methods must be those specified in the most current edition of the US EPA document Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods of Wastewater Analysis, or an equivalent method, as specified in Permit Attachment II-1 or approved by the Secretary (HWMR-6, Part IX, § 270.30(j)(1)).

I.E.9.b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, the certification (concerning waste minimization) required by HWMR-6, Part V, § 264.73(b)(9), and records of all data used to complete the application for this Permit for a period of at least 3 years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by request of the Secretary at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility (HWMR-6, Part IX, § 270.30(j)(2)).

I.E.9.c. Pursuant to HWMR-6, Part IX, § 270.30(j)(3), records of monitoring information shall specify:

i. The dates, exact place, and times of sampling or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The individuals who performed the analyses;

V. The analytical techniques or methods used; and

vi. The results of such analyses.

I.E.10. Reporting Planned Changes

The Permittee shall give notice to the Secretary, as soon as possible, of any planned physical alterations or additions to the Permitted facility (HWMR-6, Part IX, § 270.30(l)(1)).

I.E.11. Reporting Anticipated Noncompliance

The Permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements (HWMR-6, Part IX, § 270.30(l)(2)).

I.E.12. Transfer of Permits

This Permit is not transferable to any person, except after notice to the Secretary. The Secretary may require modification or revocation and reissuance of the Permit pursuant to HWMR-6, Part IX, § 270.40 (HWMR-6, Part IX, § 270.30(l)(3)). The Permittee shall comply with Permit Condition II.B regarding additional notification requirements in the event of a transfer.

I.E.13. Certification of Construction or Modification

The Permittee may not commence storage of containerized hazardous waste or treatment of

waste fuel in the modified portion of the facility until the Permittee has submitted to the Secretary, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and

I.E.13.a. The Secretary has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit; or

I.E.13.b. The Secretary has either waived the inspection or has not within 15 days notified the Permittee of his intent to inspect (HWMR-6, Part IX, § 270.30(l)(2)).

I.E.14. Twenty-Four Hour and Subsequent Reporting

I.E.14.a. The Permittee shall report to the Secretary any noncompliance which may endanger health or the environment. This report must be made orally within twenty-four hours of the time the Permittee becomes aware of the situation and the report must be made even if the Contingency Plan (Permit Attachment II-6) is not implemented. The report must include:

i. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

ii. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility which could threaten the environment or human health outside the hazardous waste management unit.

I.E.14.b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the hazardous waste management unit, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.14.c. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of the occurrence including exact dates and times; and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Secretary may waive the five-day written notice requirement in favor of a written report within 15 days (HWMR-6, Part IX, § 270.30(l)(6)).

I.E.14.d. If the Contingency Plan is implemented, the Permittee must comply with the reporting requirements listed in Permit Attachment II-6, page~~s~~ II-23~~ and II-24~~.

I.E.15. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, Permit Conditions I.E.1. and I.E.14., at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition I.E.14(b) (HWMR-6, Part IX, § 270.30(l)(10)).

I.E.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the

~~a Permit application or in any report to the~~ Secretary, the Permittee shall promptly submit such facts or information (HWMR-6, Part IX, § 270.30(l)(11)).

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Secretary, a designee, or authorized representative, shall be signed and certified in accordance with HWMR-6, Part IX, §§ 270.11 and 270.30(k).

I.G. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE SECRETARY

All reports, notifications, or other submissions which are required by this Permit to be sent or given to the Secretary should be sent by certified mail or given to:

Hazardous & Radioactive Materials Bureau, Chief
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502

I.H. CONFIDENTIAL INFORMATION

In accordance with HWMR-6, Part IX, § 270.12, the Permittee may claim confidential any information required to be submitted by this Permit.

I.I. DOCUMENTS TO BE SUBMITTED - COMPLIANCE SCHEDULE

The Permittee shall submit the following documents to the Secretary by the dates shown:

	Document	Due Dates
1.	Assessment of the Evaporation Tank Unit's primary containment, plastic membrane (Permit Attachment IV-5, Item 1)	Annually beginning 4/1/93
2.	Update assessment report to determine necessary measures to extend life of the steel structural component of the evaporation tanks (Permit Attachment IV-5, Item 3)	11/1/98
3.	Engineering assessment that addresses all Evaporation Tank Unit deficiencies noted in Permit Attachment IV-3A (Permit Attachment IV-5, Item 4)	4/1/93

4. Sampling and analysis plan for soil at the Open Detonation Unit (Permit Attachment V-4). Submit all draft versions prior to the required date. An approvable plan must be submitted by the required date. — 4/1/93

~~5. Final as-built construction inspection and certification of the Waste Fuel Treatment Unit by an independent professional engineer (Module VI, VI.K.) — Prior to operating the unit~~

~~6. As-Built drawings of the Waste Fuel Treatment Unit (Module VI, VI.K.) — Prior to operating the unit~~

~~7. Final tightness report for each hazardous tank at the Waste Fuel Treatment Unit (Module VI, VI.K.) — Prior to operating the unit~~

~~8. Documented identification and implementation of a method or device that will be used to maintain the concentration of volatile organic compounds released to the air from the Waste Fuel Treatment Unit at a level acceptable to the NMED (Permit Attachment VI-1)~~

I.J. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, until closure is completed and certified by an independent, registered professional engineer, the following documents and all amendments, revisions and modifications to these documents:

1. Waste Analysis Plan, as required by HWMR-6, Part V, § 264.13 and this Permit.

2. Inspection schedules, as required by HWMR-6, Part V, § 264.15(b)(2) and this Permit. Logs must also be maintained as required by HWMR-6 V, § 264.15(d).

3. Personnel training documents and records, as required by HWMR-6, Part V, § 264.16(d) and this Permit.

4. Contingency Plan, as required by HWMR-6, Part V, § 264.53(a) and this Permit.

5. Operating record, as required by HWMR-6, Part V, § 264.73 and this Permit.

6. Closure Plan, as required by HWMR-6, Part V, § 264.112(a) and this Permit.

I.K. PERMIT CONSTRUCTION

I.K.1. Citations

Whenever paragraphs of this Permit or of the Hazardous Waste Regulations are cited, such citations include all subordinate sections of the cited paragraph. When subordinate sections are cited, such citations include all subsections of the cited paragraphs. All such citations shall be considered an inclusion by reference to this Permit in accordance with HWMR-6, Part IX.

I.K.2. Gender

Whenever the pronoun "he", is used in reference to the Secretary of the New Mexico Environment Department or the Permittee, it is to be read as "she" in any instance where the person of the reference is female.

MODULE II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

The Permittee shall construct maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or unsudden release of hazardous waste constituents to air, soil or surface water which could threaten human health or the environment as required by HWMR-6, Part V, § 264.31. The Permittee shall maintain all structures and equipment and follow the procedures described in Permit Attachment II-1 through II-7.

II.B. REQUIRED NOTICES

II.B.1. Hazardous Waste Imports

This Permit does not allow the Permittee to receive hazardous waste from a foreign source. If the Permittee is to receive hazardous waste from a foreign source, he shall apply for and receive a permit modification in accordance with HWMR-6, Part IX, § 270.42 prior to accepting such waste.

II.B.2. Hazardous Waste from Off-Site Sources

"Off-site source" refers to waste generated by sources other than the Permittee or its contractors operating on-site. This Permit does not allow the Permittee to receive hazardous waste from off-site. If the Permittee is to receive hazardous waste from off-site, he shall apply for and receive a permit modification in accordance with HWMR-6, Part V, § 270.42 prior to accepting such waste.

II.C. GENERAL WASTE ANALYSIS

The Permittee shall follow the waste analysis procedures required by HWMR-6, Part V, § 264.13, as described in the attached Waste Analysis Plan, Permit Attachment II-1.

The Permittee shall verify the analysis of each waste stream according to the schedule set out in Permit Attachment II-1. Any sampling, testing, or analytical methods not specifically described in Permit Attachment II-1 must be in accordance with the most current edition of the US EPA document, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or equivalent methods approved by the Secretary. At a minimum, the Permittee shall maintain proper functional instruments, use approved sampling and analytical

methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, then the Permittee shall inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this Permit.

II.D. SECURITY

In compliance with HWMR-6, Part V, § 264.14(a) and the Security Procedures Plan, Permit Attachment II-2, the Permittee shall prevent the unknowing entry, and minimize the possibility of unauthorized entry onto the active portion of the facility with the security measures described in Permit Conditions II.D.1 through II.D.3.

II.D.1. Warning signs in English and Spanish in compliance with HWMR-6, Part V, § 264.14(c); and

II.D.2. An artificial or natural barrier which completely surrounds the active portion of the facility in compliance with HWMR-6, Part V, § 246.14(b)(i); and

II.D.3. A means of control entry, at all times, through the gates or other entrances to the active portion of the facility in compliance with HWMR-6, Part V, § 264.14(b)(ii).

II.E. GENERAL INSPECTION REQUIREMENTS

II.E.1. The Permittee shall inspect the facility in accordance with an Inspection Log that includes, at a minimum, the information contained in Permit Attachment II-3 to detect deterioration, malfunction, operator error, and discharges required by HWMR-6, Part V, § 264.15(b).

II.E.2. The facility shall be inspected in accordance with HWMR-6, Part V, § 264.15(b)(4) as determined by the Permittee in Permit Attachment II-3.

II.E.3. The Permittee shall remedy any nonconformance which the inspection reveals in accordance with HWMR-6, Part V, § 264.15(c).

II.E.4. Records of inspection shall be kept, as required by HWMR-6, Part V, § 264.15(d). The records shall be kept for three years in the Operating Record, as required by HWMR-6, Part V, § 264.73(b)(5).

II.E.5. Areas subject to spills, such as loading and

unloading areas, shall be inspected daily when in use.

II.F. PERSONNEL TRAINING

The Permittee shall conduct personnel training, as required by HWMR-6, Part V, § 264.16. This training program shall include, at a minimum, the information presented in the attached outline, Permit Attachment II-4 (Personnel Training). The Permittee shall maintain the documents and records required by HWMR-6, Part V, 5 § 264.16(d) and (e) and Permit Condition II.K.1.c.

II.G. SPECIAL PROVISIONS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of HWMR-6, Part V, § 264.17(a). The Permittee shall follow the procedures for managing ignitable, reactive, and incompatible wastes set forth in Permit Attachment II-5 (Special Considerations) and Permit Modules III through VI.

II.H. LOCATION STANDARDS

The Permittee shall construct new units, and operate, and maintain the facility to prevent washout of any hazardous waste by a 100-year flood, as required by HWMR-6, Part V, § 264.18(b)(1).

In the event of a 100-year flood, the Permittee shall remove all hazardous waste, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to the flood waters, as required by HWMR-6, Part V, § 264.18(b)(1)(i).

II.I. PREPAREDNESS AND PREVENTION

II.I.1. Required Equipment

At a minimum, the Permittee shall maintain at the facility the communication, spill control, decontamination, and fire control equipment set forth in Permit Attachment II-6 (Contingency Plan) as required by HWMR-6, Part V, § 264.32.

II.I.2. Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.I.1, as necessary, to assure its proper operation in time of emergency, as required by HWMR-6, ~~Part V§ 264.33~~Part V, § 264.33.

II.I.3. Access to Communications or Alarm System

The Permittee shall maintain access to the communications or alarm system, as required by HWMR-6, Part V, § 264.34.

II.I.4. Required Aisle Space

At a minimum, the Permittee shall maintain aisle space to allow the unobstructed movement of personnel and equipment to any area of the facility operations in an emergency (HWMR-6, Part V, § 264.35).

II.I.5. Arrangements with Local Authorities

The Permittee shall maintain preparedness and prevention arrangements with state and local authorities (Permit Attachment II-6), as required by HWMR-6, Part V, § 264.37. If state or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the Operating Record.

II.I.6. Waste Management Records

Waste management records shall be maintained in the Operating Record in compliance with HWMR-6, Part V, § 264.73(b). Current waste descriptions and quantities shall be made available to the emergency coordinator for assessment of possible hazards to human health and the environment (§ 264.56(c)).

II.J. CONTINGENCY PLAN

II.J.1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan, Permit Attachment II-6, whenever there is a fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment (HWMR-6, Part V, § 264.51(b)).

II.J.2. Copies of Plan

The Permittee shall maintain and distribute copies of the Contingency Plan in accordance with the requirements of HWMR-6, Part V, § 264.53.

II.J.3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the Contingency Plan, as required by HWMR-6, Part V, § 264.54.

II.J.4. Emergency Coordinator

A trained emergency coordinator shall be available at all times in case of an emergency, as required by HWMR-6, Part V, § 264.55. He must implement the requirements of HWMR-6, Part V, § 264.56.

II.K. RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with the requirements specified in Permit Condition II.K.1 through II.K.3.

II.K.1. Documents to be Maintained at the Facility

The Permittee shall maintain at the facility the documents specified in Permit Conditions II.K.1 through II.K.3

II.K.1.a. Waste Analysis Plan, as required by HWMR-6, Part V, § 264.13.

II.K.1.b. Inspection Schedule, as required by HWMR-6, Part V, § 264.15(b)(2).

II.K.1.c. Personnel documents and records, as required by HWMR-6, Part V, § 264.16(d).

II.K.1.d. Contingency Plan, as required by HWMR-6, Part V, § 264.53(a).

II.K.2. Operating Record

An operating record containing the information required by HWMR-6, Part V, § 264.73 shall be maintained at the facility.

II.K.3. Biennial Report

The biennial report shall be prepared and submitted, in compliance with HWMR-6, Part V, § 264.75.

II.L. GENERAL CLOSURE REQUIREMENTS

II.L.1. Performance Standard

The Permittee shall close the facility, as required by HWMR-6, Part V, § 264.111 and in accordance with the Closure Plan, Permit Attachment II-7.

II.L.2. Amendment to Closure Plan

The Permittee shall submit a Permit Modification to authorize a change to the Closure Plan in accordance with HWMR-6, Part V, § 264.112 whenever the circumstances in § 264.112(c)(2)(i)-(iii) occur.

II.L.3. Notification of Closure

The Permittee shall notify the Secretary in writing at least 60 days prior to the date on which it is expected that final closure will begin for the Open Detonation Unit, as required by HWMR-6, Part V, § 264.112(d).

The Permittee shall notify the Secretary in writing at least 45 days prior to the date on which it is expected that final closure will begin for the Container Storage Unit, the Evaporation Tank System Unit and the Waste Fuel Treatment Unit, as required by HWMR-6, Part V, § 264.112(d).

II.L.4. Time Allowed For Closure

After receiving the final volume of hazardous waste from any permitted unit, the Permittee shall treat, remove from that unit, or dispose of on site all hazardous waste and shall complete closure activities, in accordance with HWMR-6, Part V, § 264.113 and the schedules that are specified in the Closure Plan, Permit Attachment II-7, or as amended by the requirement of Permit Condition II.L.2.

II.L.5. Disposal or Decontamination of Equipment, Structures, and Soils

The Permittee shall decontaminate or dispose of all contaminated equipment, structures, and soils, as required by HWMR-6, Part V, § 264.114 and the Closure Plan, Permit Attachment II-7.

II.L.6. Certification of Closure

The Permittee shall certify that the facility has been closed in accordance with the specifications in the Closure Plan, as required by HWMR-6, Part V, § 264.115.

II.L.7. Survey Plat

The Permittee shall submit a survey plat no later than the submission of certification of closure of each hazardous waste disposal unit, in accordance with HWMR-6, Part V, § 264.116.

II.M. REQUIREMENTS FOR HAZARDOUS WASTE RELEASES

If, based on information contained in reports required by Module I, Permit Conditions I.E.14.a. and b., the Secretary determines that a release from any of the permitted units is in such a quantity, duration or repeated occurrence that further assessment is required, the Permittee may be directed to conduct sampling and analysis required pursuant to HWMR-6, Part IX, § 270.14(d).

PERMIT ATTACHMENT II-1
WASTE ANALYSIS PLAN

Introduction

This plan has been developed to satisfy the requirements of HWMR-6, Part IX, § 270.14(b)(3) and to provide sufficient physical and chemical data in order to store, treat and dispose of waste in accordance with all Federal and State regulations.

The plan covers those wastes which are hazardous, as defined in HWMR-6, Part II, § 261, and stored in the Container Storage Unit, treated in the Evaporation Tank Unit, disposed in the Open Detonation Unit or treated in the Waste Fuel Treatment Unit. Wastes that are not regulated under RCRA have not been included in this plan.

Coordination of all hazardous waste management is provided by the WSTF ~~Environmental contractor~~contractor Environmental Department. Determination for the appropriate treatment, storage and/or disposal method for each hazardous waste will be made by this group, utilizing chemical analysis and process knowledge from all waste streams. Figure II-1-1 generally illustrates the determination process.

Coordination of all chemical analyses is provided by the WSTF ~~Chemistry contractor~~contractor Environmental Department. Analyses are either performed at the on site laboratory or shipped off-site to a commercial laboratory. In either case, analytic methods and procedures are limited to those approved by U.S. EPA and/or the Secretary.

Chemical analysis for some waste streams may not be desirable or necessary due to the chemical and physical nature of some wastes. In certain cases, process knowledge may be preferred. Examples of these include waste explosives, and nickel-cadmium batteries where the potential for a reaction or increased toxicity may develop. In other cases, certain parameters cannot be measured for all wastes. An examples of this is pH for organic oils and water insoluble solvents where hydrogen ions are not present. Only applicable parameters will be monitored. In addition, waste products and off-specification materials which can be clearly identified by process knowledge, container labeling and Material Safety Data Sheets information will not require detailed monitoring.

Generator Supplied Information

Before any waste stream can be placed in one of the four permitted units, the portion of the Facility generating an individual waste stream is required to supply certain information to the ~~Environmental contractor~~contractor Environmental Department. Parameters, purpose and test methods required of these waste streams are outlined in Table II-

1-1. Each generator supplies this information based on past analytical results for the waste stream or a similar waste stream where there is knowledge of the waste generating process. Waste stream samples will be collected and analyzed in cases that the generator cannot supply process knowledge. The ~~on-site laboratory then performs or facilitates~~ contractor Environmental Department then coordinates the appropriate analyses to supply the required information.

Table II-1-1 **Generator Supplied Information**

Parameters	Rationale	Method
Physical Description	Used to determine the general physical characteristics of the waste; facilitates comparisons with subsequent samples of waste; changes in color, number of phases, clarity, etc., may be indicative of changes in the waste stream.	N/A
Flash Point	Used to determine if waste displays ignitable characteristic defined by HWMR-6, Part II, § 261.21.	SW-846 1010‡
pH	Used to determine of waste is a corrosive waste as defined by HWMR-6, Part II, § 261.22; significant changes could be indicative of changes in waste characteristics and composition.	SW-846 9040‡
Generating Process	Used to determine if waste is a listed hazardous waste as defined by HWMR-6, Part II, § 261.	N/A
Specific Gravity	Used because significant changes can be indicative of changes in waste characteristics and composition.	ASTM** D891‡ -86

* US EPA document, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods

** American Society of Testing materials

‡ Analysis to be performed by this method or an equivalent SW-846 method.

Updates of generator information are required when: 1) change occurs in the process generating the waste; 2) change occurs in the materials used in the process generating the waste stream; or 3) a calendar year has passed since the waste stream information was last updated and reviewed.

Waste Management- Sampling & Analysis

Container Storage Unit - ~~WSTF Environmental Section personnel will sample all containerized liquids stored in the Container Storage Unit on at least an annual basis.~~The WSTF contractor Environmental Department will insure that sampling and analyses of all containerized liquids stored in the Container Storage Unit occurs on an annual basis. This will be used as a check to verify that no changes have occurred in the waste streams intended for containerized storage. Sampling procedures conform to those generally noted in the following discussion on sampling and sampling equipment. Analyses will be for physical description, flash point, pH, and specific gravity. The three latter analyses are outlined in Table II-1-1. Results of the analyses are compared with the information supplied by the generators of specific waste streams and any other previous analyses.

Evaporation Tank Unit - The WSTF ~~Environmental Section~~contractor Environmental Department personnel will sample the evaporation tanks~~ and the drain line sump~~ for parameters, frequency and analytical methods noted in Tables II-1-2a, II-1-2b, ~~II-1-2c~~ and II-1-2d (See Permit Attachment IV-4) and in accordance with the requirements of 40 CFR part 264 subpart CC, when effective. The WSTF ~~Environmental Section~~contractor Environmental Department may require additional analyses or increase in the frequency of sample collection if site operations warrant more information.

Table II-1-2a **Evaporation Tanks, Analytical Data of Light Phase**

Parameters	~~Frequency~~	Method
pH	Monthly	SW-846, 9040[‡]
Physical Appearance	"	N/A
Hydrazines	"Semiannually	WSTF LJI-320-31-173* or WSTF LJI-320-31-210***
~~Flash Point~~	"	~~SW-846, 1010~~
Evolvable Cyanides	Annually	SW-846, 7.3.3.2[‡]
Evolvable Sulfides	"	SW-846, 7.3.4.2[‡]
TCLP Metals	"	HWMR-6**, Part II, §261. App.II,1311
Volatile Organics	"	SW-846, 8240[‡]
Semivolatile Organics	"	SW-846, 8270[‡]

[‡] Analysis to be performed by this method or an equivalent SW-846 method.

* Determination of Hydrazines by Ion Chromatography Using Dionex IC 40001 (White Sands Test Facility, Laboratory Job Instructions)
**NM Hazardous Waste Management Waste Regulations, sixth version

*** Determination of Propellant Hydrazines in Aqueous Solution using High Performance Liquid Chromatography with Amperometric Detection (White Sands Test Facility Job Instructions)

Table II-1-2b **Evaporation Tanks, Analytical Data of Dense Phase**

Parameters	Frequency	Method
pH	Semiannually	Noted above
Physical Appearance	Monthly	"
Hydrazines	Semiannually	"
~~Flash Point~~	"	"
Evolvable Cyanides	Annually	"
Evolvable Sulfides	"	"
TCLP Metals and Volatiles	"	SW-846, 1311[1]

~~Table II-1-2c **Drain Line Sump, Analytical Data for all Phases**~~

~~Parameters~~	~~Frequency~~	~~Method~~
~~pH~~	~~Monthly~~	~~Noted above~~
~~Physical Appearance~~	"	"
~~Hydrazines~~	"	"
~~Volatile Organics~~	"	~~SW-846, 8240~~
~~Flash Point~~	~~Annually~~	~~Noted above~~
~~Evolvable Cyanides~~	"	"
~~Evolvable Sulfides~~	"	"
~~TCLP Metals~~	"	"
~~Semivolatiles~~	"	~~SW-846, 8270~~

[1] Analysis to be performed by this method or an equivalent SW-846 method.

Table II-1-2d	**Evaporation Tanks ~~and Drain Line Sump~~ Sampling Rationale**

Parameters	Rationale
Physical Appearance	Same rationale noted in Table II-1-1 above
Flash Point	" " " " " " " "
pH	" " " " " " " "
Total Organic Carbon	Used to indicate changes in the total organic content; increases could indicate changes in waste characteristics and composition (see Permit Attachment IV-4, discussion on TOC).
Hydrazines	Indicative of the hydrazine concentrations; significant changes in concentration could be indicative of changes in waste characteristics and composition.
Evolvable Cyanide	Indicative of the amount of cyanide gas that could be released under acidic conditions (pH <2).
Evolvable Sulfide	Indicative of the amount of sulfide gas that could be released under acidic conditions (pH <2).
Volatile Organics	Provides specific volatile organic constituent concentrations; changes in concentrations could be indicative of changes in waste characteristics and composition.
Semivolatiles	Provides specific semivolatile organic constituent concentrations; changes in concentrations could be indicative of changes in waste characteristics and composition.
TCLP Metals	Indicative of leachable concentrations of metals in the waste; changes in concentrations could be indicative of changes in waste characteristics and composition.
TCLP Volatiles	Indicative of the leachable concentrations of volatile organics in the waste; significant changes in concentrations could be indicative of changes in waste characteristics and composition.

Sampling techniques and equipment used to sample contaminated waste from the evaporation tanks ~~and the drain line sump~~ conform to instructions provided in the US EPA document SW-846, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, Volume II, Part III, Chapter 9, and other EPA recommended methods. ~~Details of the sampling and analysis plan for the sump are provided in Permit Attachment IV-4. The technique for sampling the evaporation tanks will be identical to that of the drain line sump.~~ The sampling device for ~~sump~~evaporation tank waste media is a ~~dedicated teflon bailer. For the evaporation tanks, a~~ modified COLIWASA (Sludge Judge) ~~is used to collect waste media.~~ ~~Both~~This ~~devices~~device will allow various phases to be identified and dispensed into separate containers.

If light, dense or transitional phases are present in ~~either of~~ the evaporation tanks ~~or the drain line sump~~, samples will be collected from each phase. In the case of transitional phases, the WSTF ~~Environmental Section~~contractor Environmental Department will make the decision to sample intermediate phases from the tanks on the light or dense phase schedule in Tables II-1-2a and 2b respectively. ~~All phases occurring in the sump will be sampled and analyzed separately. The light phase is sampled more frequently in the tanks than the dense phase because, based on historical data, it is more chemically variable and it is directly exposed to the atmosphere.~~

Equipment used in sampling operations will be either disposable or reusable. The disposable equipment will be shipped off-site for disposal. Reusable equipment will be triple rinsed with deionized water before being placed in plastic bags. All contaminated water will be transferred to the Evaporation Tank Unit for treatment.

Open Detonation Unit - An Ordnance Officer from the ~~Envrionmental Section~~contractor Environmental Department is responsible for characterization of all Class A, B, and C type explosives prior to their treatment/disposal in the Open Detonation Unit. The Officer maintains a current file of pertinent Material Safety Data Sheets and a historical file of all explosives that have ever been detonated at the site. Record information include: date; item detonated; number of items; and types and quantities of explosive filler(s).

~~Soil samples are collected annually from the area of the detonation trench. Between 1989 and 1991 samples were analyzed for TCLP Metals (Method 1311) and Explosive Residues(Method 8330). In most cases leachable quantities of metals were undetected in both background and routine samples by the TCLP method. The sampling program will be modified to analyze for total metals(Methods 6010 and 7740) rather than TCLP Metals (See Permit Attachment V-4). To this end, a new background for metals will be established. The 6010 list of metals will be reduced to~~

~~include only those suspect metals that occur with permitted waste and 7740 is added to include selenium. A statistical analysis will be performed for each analyte, metal or organic. Whenever a significant statistical increase from background occurs, measures will be taken to reduce acknowledged concentrations that are in the soil.~~

Soil samples will be collected annually from the OD Unit trench area (if OD operations are performed between sampling events) until closure of the Unit. To ensure that adequate data are collected during inactive periods, sampling will be performed at least once every two years until closure of the Unit. Samples will be collected, as specified by Permit Attachment V-4, for total metals (Methods 6010 and 7740) and Explosive Residues (Method 8330) analyses. Total metals' analyses are performed for arsenic, barium, cadmium, chromium, lead, and silver by Method 6010 and for selenium by Method 7740. Table II-1-3 provides a summary of the rationale for collection of samples from the OD Unit. Permit Attachment V-4 provides a detailed Sampling and Analysis Plan for the OD Unit.

Table II-1-3 **Open Detonation Mandatory Analyses**

Parameter	Rationale	Method
Total Metals	Used for the detection of arsenic, barium, cadmium, chromium, lead, ~~6010/7740~~ silver and selenium within the OD Unit. ~~which~~These are possible constituents of explosive formulations that are permitted at the WSTF.	SW-846[1] 6010 and 7740
Explosive Residue	Used for the detection of organic constituents of explosive formulations that are permitted at the WSTF.	SW-846[1] 8330

[1] Analysis to be performed by this method or an equivalent SW-846 method.

~~**Waste Fuel Treatment Unit** - Waste fuel (hydrazines) treated at the unit will be analyzed a minimum of three times prior to being transferred to the Evaporation Tank Unit, evaporation tanks. The initial analysis will be used to determine pH and if fuel concentrations are less than ten percent in solution. Solutions with concentrations above this value will be diluted with water prior to storage at the unit. When a treatable quantity of stored waste fuel is collected, a second analysis will be performed to insure that the waste fuel concentration is less than one percent and that the pH is adjusted appropriately. If the fuel concentration is greater than the one percent, it will be adjusted by the addition of water, and the necessary amounts of treatment chemicals will then be determined. The third analysis will be performed when the treatment is completed. At completion of treatment the maximum concentration will be less than 330 ppmw in solution. Based on existing 90 day tank treatment, concentration values are often less than 10 ppmw in solution.~~

~~The initial and second fuel analyses measures hydrazines by coulometry, while the third analysis measure hydrazine by Ion Chromatography. Table II-1-4 outlines the parameters, purpose and method used for each analysis.~~

Waste Fuel Treatment Unit - Waste fuel (hydrazine(s)) treated at the unit will be analyzed a minimum of three times prior to being transferred to the Evaporation Tank Unit, evaporation tanks. The initial analysis will be used to determine if the concentration of hydrazine(s) is less than ten percent by weight in solution. Solutions with concentrations greater than ten weight percent will be diluted with water prior to storage at the unit. When a treatable quantity of stored waste is collected, a second analysis will be performed to ensure that the waste fuel

concentration is less than one weight percent and that the acceptable pH range is established. If the treatable fuel concentration is above one weight percent, it will be adjusted to below one weight percent by the addition of water. The necessary amounts of treatment chemicals will then be determined. The third analysis will be performed when the treatment is completed. At completion of treatment the concentration will be less than 330 ppmw in solution. Based on the existing 90 day tank treatment, concentration values are typically less than 10 ppmw in solution.

The analyses will be for hydrazine(s) by either coulometry, Ion Chromatography (IC) or High Pressure Liquid Chromatography (HPLC). During treatment, the hydrogen potential (pH) will be monitored to maintain pH during treatment. The specific analytical methods are outlined in Table II-1-4.

~~Table II-1-4 Waste Fuel Unit, Mandatory Analysis~~

~~Parameters~~	~~Rationale~~	~~Method~~
~~pH~~	~~Indicative of the corrosive nature of the waste and the effectiveness of the pH control of the treatment process~~	~~SW 846 9040~~
~~Hydrazines by Coulometry~~	~~Used to determine the amount of chlorine oxidizable constituents in the waste. Results determine the amount of treatable chemicals required to treat the waste fuel~~	~~WSTF LJI-320-31-145~~
~~Hydrazines by Ion Chromatography~~	~~Indicative of the hydrazine concentration of the treated waste fuel; results determine if the waste has been properly treated and can be transferred into the evaporation tanks~~	~~WSTF LJI-320-31-173~~

~~Waste accepted for treatment is analyzed for hydrazines by coulometry. The hydrogen potential (pH) is also measured. Results of these analyses indicate the quantity of treatment chemicals required.~~

Table II-1-4 **Waste Fuel Unit, Mandatory Analysis**

Parameters	Rationale	Method
pH	Monitored to maintain the correct pH range during the treatment process. The pH is monitored with a pH meter installed in the treatment system.	
Hydrazines by Coulometry	Used to determine the amount of chlorine oxidizable constituents in the waste.	WSTF LJI-320-31-145
Hydrazines by Ion Chromatography	Indicative of the hydrazines concentration of the waste fuel derivative analysis.	WSTF LJI-320-31-173
Hydrazines by High Pressure Liquid Chromatography	Indicative of the hydrazines concentration of the waste fuel.	WSTF LJI-320-31-210

Quality Assurance/Quality Control Program

The quality assurance/quality control procedures utilized by this program conform with the technical aspects in Chapters One through Nine in SW 846 and other EPA recommended methods.

All on site sampling and analytical activities are performed by the White Sands Test Facility personnel capable and qualified to perform the assigned duties. The facility laboratory management is charged with the responsibility to qualify the on-site personnel to perform analytical work, while the WSTF ~~Environmental Section~~contractor Environmental Department management is required to qualify its personnel for sampling waste streams. These qualifications are based on individual employees proficiencies and abilities to perform the work. A list of qualified personnel is maintained at the facility and it is updated on at least an annual basis.

~~The laboratory Quality Assurance personnel Environmental Department are responsible for: 1) ensuring that samples are collected, preserved and transported as specified in the appropriate sampling method; 2) checking that all sample documentation is correct and is sent along with samples that are brought to the facility laboratory; and 3) ensuring that analyses of samples are performed by the~~

The contractor Environmental Department is responsible for ensuring that the samples are collected, preserved and transported appropiately and that all field documentation is correct and transported to the facility laboratory with the samples. The facility laboratory is responsible for ensuring that analyses of the samples are performed by the

appropriate analytical methods and in accordance with the constraints of each method.

Chain of Custody

Chain of custody procedures are used to document the possession and handling of samples from the time they are collected until they are analyzed and have reached their final disposition. A record of the information provided includes: 1) sample number; 2) sample description; 3) sample preservation; 4) analysis required; 5) signature of collector; 6) location of collection; 7) waste matrix; 8) signature of persons involved in the chain of custody; 9) inclusive dates of possession; and 10) signature, date and time of breaking the chain of custody seal. An individual in custody of any waste sample must comply with the procedures identified in SW 846, Chapter Nine, Section 9.2.2.7 and those included here.

Sample labels are necessary to prevent misidentification of samples. Gummed paper labels or tags are adequate and will include at a minimum: 1) sample number; 2) name of collector; 3) sample collection location; 4) analytical method; and 5) preservation method. Labels are affixed to sample containers before sampling and they will be filled out immediately after the time of collection.

Sample numbers are assigned by a number corresponding to the last two digits of the calendar year, two digits of the month, two digits of the day of the month, and the Greenwich Mean Time at the time of collection (YYMMDDHHHH). These numbers are unique to each sample and they identify the time each sample was collected.

Sample seals are used to detect unauthorized tampering of samples following sample collection up until the time of analysis. Gummed paper seals are used for this purpose. Included on the seal at a minimum are: 1) sample number; 2) name of collector; and 3) place of collection. The seal is attached in a manner that makes it necessary to break it in order to open the sample container. Seals are affixed to the containers before the sample(s) leave the custody of the sampling personnel.

All information pertinent to a survey or sampling event is recorded in a log book. Records in the logbook will include at a minimum: 1) location of sampling point; 2) name of sampling personnel; 3) waste generation information; 4) type of waste; 5) suspected waste composition; 6) number and volume of sample; 7) purpose of sampling; 8) description of sampling point and methodology used for collection of the sample; 9) sample identification number; 10) sample preservation; 11) sample distribution; 12) field observations and measurements; 13) signature of personnel responsible for observations.

An analysis sheet is required to accompany each sample that is delivered to the facility laboratory. The laboratory portion of the form will be completed by laboratory personnel and includes at a minimum: 1) name of person receiving the sample; 2) laboratory sample number; 3) date and time of sample receipt; and 4) analysis to be performed.

Once samples are collected, they can be sent off-site to a commercial laboratory for analysis or analyzed on site. Samples that are sent off-site for analysis are packaged and shipped as directed in SW 846 and the requirements of the commercial laboratory. In both cases, ~~they are sent to the facility laboratory where they are received and inspected by laboratory personnel. The laboratory personnel~~ the on or off-site's laboratory custodian will receive, inspect and verify that the samples are correctly labeled and documentation is correct.~~, and physical condition of the containers are inspected~~ Any discrepancies are resolved with the collector at ~~this time~~ the time of laboratory receipt.

~~From the facility laboratory, the sample(s) can be sent off-site to a commercial laboratory for analysis or analyzed on site. Samples that are to be sent off-site for analysis are packaged and shipped as directed in SW 846 and the requirements of the commercial laboratory.~~

The Quality Control designee is responsible for evaluating the accuracy and the precision of analytical data in order to establish the quality of the data. Furthermore, the designee will assure: 1) the analytical personnel possesses the level of expertise to perform the required analysis; 2) the appropriate analytical methods are used; 3) instrument calibration is performed as required~~ in the 4 specific methods~~; 4) ~~inclusion of~~ split/spiked field samples, reagent blanks, surrogate spikes, matrix spike duplicate samples and check~~,~~ samples are included as required ~~for each event and every set of 1 to 20 samples~~; 5) column calibration samples and column blanks are utilized; 6) analytical results are statistically interpreted; 7) analytical results are updated; and 8) a complete analytical package is maintained.

Control criteria for QA/QC are followed by the facility laboratory and any contracting commercial laboratory that may be required to perform analytical work in support of the Waste Analysis Plan.

Land Disposal Restricted Waste

All waste being shipped off-site are considered to not meet treatment standards of the Land Disposal Restrictions (HWMR-6, Part VIII). The basis of this consideration is knowledge of process or sampling and analysis. If in the future wastes are

analyzed for demonstration that they meet the treatment standards, this plan will be modified.

PERMIT ATTACHMENT II-2
SECURITY PLAN

Introduction

A high degree of security is maintained at the NASA WSTF due to the nature of the research and development projects being conducted. The facility is restricted to authorized personnel for the purpose of safety and security associated with routine operations. This restriction benefits the safety and integrity of all hazardous waste units. Visitors are restricted to those portions of WSTF at which they are conducting business.

Security is further enhanced by reason of WSTF's remote location. The nearest population center is approximately 6 miles to the south at Organ, New Mexico (Figure II-2-1). In addition, a posted buffer zone of approximately 2 miles wide is maintained around the active portion of the facility.

Security guards and firemen make regularly scheduled vehicular patrols throughout the facility every 90 minutes when day time staff is off-duty. All patrol vehicles are equipped with two way radios, and radios are able to contact 24-hour emergency response personnel.

Access is restricted from the western and southern boundaries by barbed wire fencing and gates. Physical barriers in the form of mountain and distance, provides access restriction on the northern and eastern boundaries. Access is controlled at the main gate by an armed security guard. Several work areas, including all hazardous waste units are either fenced with locked gates or are controlled by locked doors. Cattle guards or locked gates are located on all access roads to prevent cattle from entering the active areas. Fences are checked monthly for breaks or "wash-outs", and repaired when needed.

Container Storage Unit

The Container Storage Unit is housed in a premanufactured metal building having 2 personnel access doors and a roll-up, overhead type garage door. This building remains locked at all times, except when inspections are being conducted or when there are waste transfers taking place. Warning signs are posted on or near all doors of the building, informing unauthorized personnel to keep out and that smoking is not permitted. The signs are in Spanish and English and are legible from a distance of at least 25 feet.

Evaporation Tank Unit

The evaporation tanks are entirely surrounded by a 7 foot high chain link fence, with two 12 foot wide gates and one that is 4 feet wide. All gates remain locked, except when inspections, maintenance, sampling, and waste transfers are taking place. Signs with the legend "Danger-Unauthorized Personnel Keep Out" and "No Smoking" in Spanish and English are posted on all four sides of the fenced enclosure. These signs are legible from a distance of at least 25 feet.

The drain line and drain line sump are fully enclosed to personal intrusion. All waste drain sinks connecting to the drain line have posted signs that specify that these particular sinks are for hazardous waste. In the area of the sump, "No Smoking" signs are posted and in view from all sides of the below grade tank.

Open Detonation Unit

Within the boundaries of the 700 Area solid waste landfill is a designated area for open detonation. The Open Detonation Unit is a ramped open trench that contains small amounts of hazardous waste in the form of explosive residues mixed with native soil and alluvial gravel. Explosive wastes are transported to and placed in the Unit only during scheduled treatment and disposal operations.

A three strand barbed wire fence, with an access gate surrounds the entire trench. Signs in English and Spanish with the wording "Danger-Unauthorized Personnel Keep Out" are posted on all four sides of the security fence. Secondary security is provided by a lockable gate at the entrance to the solid waste land fill. This gate is secured and all persons evacuated from the landfill only during the treatment and disposal of explosives waste.

Waste Fuel Treatment Unit

The Waste Fuel Treatment Unit, constructed in the 500 Area, has a 7 foot high chain link fence, with one 26 foot wide access gate and one personnel gate, surrounding the entire Unit. These gates remain locked except when inspections, maintenance, sampling, and waste and treatment chemical transfer activities take place. Signs with the wording "Danger-Unauthorized Personnel Keep Out" are posted on all four sides of the security fence and they are legible for a minimum distance of 25 feet.

PERMIT ATTACHMENT II-3
INSPECTION PLAN

Introduction

Inspections are regularly performed by several departments of the NASA White Sands Test Facility (WSTF). Those portions of the facility and safety equipment pertinent to the RCRA hazardous waste management are inspected by the WSTF fire department, the electrical maintenance shop~~, Quality Control~~ and the ~~Environmental Section~~contractor Environmental Department.

Fire Protection

Inspection and testing of safety, security and emergency systems, fire control equipment and personal protective gear is performed by the WSTF Fire Department.

All fire hydrants and fire protection water risers are inspected semi-annually for static pressure, flow pressure and quantity discharge. All fire extinguishers are inspected monthly with pressure reading and recharging date noted. Fire response pumper trucks are back flushed every two weeks.

The entire WSTF's perimeter fence is inspected semi-monthly for breaks or other deficiencies, while individual areas are inspected every 8 hours during "non-working" hours for fires, fire hazards, leaking containers and valves.

Daily operational status checks are performed for all Fire Department personal protective equipment and weekly on all fire fighting equipment.

Records of all inspections are maintained by and at the Fire Department for at least three years. Besides information specific to each item inspected, records include: 1) where the inspection took place; 2) when the inspection occurred; 3) who performed a particular inspection; and 4) any deficiencies noted during the inspection and to whom any deficiencies were reported.

Electrical Maintenance

Inspection of all alarm and paging systems are performed monthly on a routine basis by the WSTF contractor Maintenance and Operation Section and the contractor Environmental Department. Any problems discovered during inspections are recorded and repairs documented in a discrepancy report. All reports are maintained in the electrical maintenance shop or contractor Environmental Department files for a minimum of three years.

Hazardous Waste Management Units

Safety equipment provided at each of the four RCRA hazardous

waste management units are routinely inspected by ~~the Defense Contract Management Command (DCMC) group~~contractor Environmental Department personnel. All inspections are documented in a logbook which is maintained in office files for a minimum of 3 years. In addition to discrepancy reporting, the logbook includes: 1) what item(s) was inspected; 2) where inspection was conducted; 3) when it was conducted; and 4) who performed the inspection.

Discrepancies are brought to the attention of the ~~Environmental Section~~contractor Environmental Departmentwho is charged with the responsibility to coordinate response and document any discrepancies that have been corrected.

Discrepancy reporting noted in logbooks reference a separate discrepancy document that describes the problem. This document is used to initiate and direct corrective measures. After the appropriate corrections are made and recorded, the document is signed-off and maintained in ~~office records~~contractor Quality Assurance/Quality Control records for at least three years.

Container Storage Unit

The Container Storage Unit is inspected at least weekly for at least the following items:

1) access doors being secured and locked;

2) number of containers in storage;

3) leaking from any containers;

4) deterioration of containers;

5) deterioration of secondary containment pallets;

6) presence of liquid in secondary containment pallets;

7) adequate pressure in the emergency combination shower/eyewash;

8) operations of the emergency telephone;

9) presence of any unusual odor;

10) posting of no-smoking signs; and

11) posting of restricted access signs

Evaporation Tank Unit

Inspection of the Evaporation Tank Unit is separate for the evaporation tank area, and that for the drain line and drain line sump tank.

Each of the 200 Area evaporation tanks is inspected for no less than those items listed in Table II-3-1.

Table II-3-1 **200 Area Evaporation Tanks Inspection Items**

Parameters	Frequency	Method
Freeboard ~~maintained~~	~~Daily~~Every Operating Day	Adequate freeboard will be maintained.
Leak detection pipes	"	Leak detection sight glasses will be inspected for deterioration and for any fluid level.
Surrounding area	"	Inspected for leaks, spills or unauthorized discharge
Odor	"	Any unusual odor will be noted.
Associated valves	"	Inspected for deterioration or leaks.
Access road	"	Inspected for obstructions or deterioration which can cause delays or hamper the movement of vehicles and other equipment.
Fence/access gate	"	Inspected for general condition or evidence of unauthorized entry.
Loading/unloading	"	Checked for spills, ponding of water and general area condition.
Housekeeping	"	Trash and debris pick-up, etc.
Tanks and foundations	"	Inspect for signs of corrosion, leakage or deterioration.
Gates	Weekly	Checked for obstruction(s).
Signs	"	Presence and legibility of proper warning signs.
Shower & Eyewash	"	Inspect for functional operation.
Lighting	"	Inspect for adequacy and operational condition.
High level beacon alarm	"	Functionally checked.

The 200 Area hazardous waste drain lines and the drain line sump are inspected for, at a minimum, the items given in Table II-3-2.

Table II-3-2 **Haz Waste Drain Line and Sump Inspection Items**

Parameters	Frequency	Method
Above ground piping	~~Daily~~Every Operating Day	Inspect for evidence of leaks or deterioration.
Inside building pipes	"	" " " " " "
Sump pipes	"	" " " " " "
Valves	"	" " " " " "
Valve positions	"	Checked to assure valves are in their operating position.
Leak detection glass	"	Inspected for evidence of leaks and any evidence of fluids in secondary containment for the drain line between the sump and the evaporation tanks.
Line's optical detectors	"	Checked for alarm condition and insure that power supply is on.
Sump moisture sensor	"	Power light on and control key turned to normal.
Sump level sensor	"	Power light on and sump level displayed on the monitor.
Signs	Weekly	Presence and legibility of proper warning signs at the sump tank.
Shower & Eyewash	"	Inspect for functional operation.

Open Detonation Unit

The Open Detonation Unit will be inspected at a minimum for the following items on a weekly basis: 1) that the gate is closed andfences in good shape; and 2) that the appropriate "no entry" signs are present and legible.

Waste Fuel Treatment Unit

The Waste Fuel Treatment Unit, located in the 500 Area, will be inspected at a minimum for those items given in Table II-3-3.

Table II-3-3 **Waste Fuel Treatment Unit Inspection Items**

Parameters	Frequency	Method
Tank level	~~Daily~~Every Operating Day	Inspect sight glass to insure that tanks have at least 10% headspace.
Tanks and foundations	"	Inspected for signs of leakage, corrosion or deterioration.
Surrounding evidence area	"	Inspect for leaks, spills or unauthorized discharge.
Odors	"	Any unusual odor will be noted.
Associated leaks	"	Inspected for deterioration or leaks.
Valves and piping	"	
Access Road	"	Inspected for obstructions or deterioration which may cause delays or hamper the movement of vehicles and equipment.
Fence/access gates	"	Inspected for general condition or evidence of unauthorized entry.
Loading/unloading	"	Check for spills, ponding of water and general area condition.
Housekeeping	"	Trash and debris pick-up, etc.
Gates	Weekly	Checked for obstructions.
Signs	"	Presence and legibility of proper warning signs.

PERMIT ATTACHMENT II-4
TRAINING PLAN

This training plan has been developed to assure that those WSTF employees involved with hazardous waste treatment, storage, and disposal receive adequate training in the proper procedures relevant to their job responsibilities. All training records are maintained in office files by the contractor Environmental ~~Section~~ Department.

Parts of this plan contain a descriptive outline for training courses and descriptions of employee positions.

Training Program

WSTF has developed a series of training modules which are taught by facility qualified instructors. These modules have been developed to assure that employees involved in WSTF's hazardous waste management activities receive adequate training to perform their job duties in compliance with all relevant federal and state regulations. Records for each employee include a syllabus and certification of completion for each course.

Individual training program will be supplemented with private and public sector courses when necessary. The Environmental Training Coordinator evaluates and makes determinations for the need for supplemental training. Consideration will be given for material not covered by those training modules outlined in this plan.

Training Modules

The training program is based on the training modules outlined in this plan and listed in Table II-4-1 These modules are taught as classroom sessions by facility qualified instructors. Where applicable, classroom training is supplemented and/or substituted with on-the-job training. Approved on-the-job training is documented by the Environmental Training Coordinator and a record is maintained in personnel records.

Table II-4-1 **WSTF Training Modules**

#1	Chemical Safety
#2	RCRA Regulations
#3	WSTF Environmental Procedures
#4	WSTF Contingency Plan
#5	200/500 Area Evaporation Tank/Fuel Treatment Systems
#6	Propellant Contaminated Waste Streams Handling

#7	Hazardous Waste Container Handling
#8	Hazardous Waste shipments
#9	Waste Analysis Plan

Training Module Outlines

The following outlines briefly describe the type of material covered in the individual training modules. These outlines are modified periodically to remain current with experience and regulatory changes, keeping the protection of human health and the environment as the ultimate priority.

Training Module #1 **Chemical Safety**

I. Chemical and Physical Hazards

A. Reactivity
B. Corrosivity
C. Toxicity
D. Combustibility
E. Flammability
F. Explosivity
G. Pressure

II. Health Hazards

A. Body Response

1. Respiratory Tract
2. Skin
3. Eyes
4. Central Nervous System
5. Liver
6. Kidneys
7. Blood
8. Reproductive System

B. Exposure Guidelines

1. American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV's)

a. TLV-Time Weighted Average (TWA)
b. TLV-Short-Term Exposure Limit (STEL)
c. TLV-Ceiling

2. Occupational Safety and Health Administration

3. National Institute for Occupational Safety and Health

III. Hazard Communication - 29 CFR, Part 1910

A. Labeling Requirements
B. Material Safety Data Sheets

1. Identity of Hazardous Chemicals
2. Physical and Chemical Characteristics
3. Physical Hazards
4. Health Hazards
5. Primary Route of Entry
6. Exposure Limits
7. Carcinogenicity
8. Handling Instructions
9. Control Measures
10. Emergency and First Aid Procedures
11. Date of Prep
12. Name, address, phone of manufacturer

C. Exceptions

1. Retail Products
2. Office Products

D. WSTF contractor Environmental ~~Section~~ Department Procedure -"Hazardous Communications"

Training Module #2 RCRA Regulations

I. Background

A. Behavior of Chemicals in the Environment

1. Introduction
2. Dispersion Pathways

a. Ignitability
b. Corrosivity
c. Reactivity
d. Toxicity Characteristic Leaching Process

3. Fate of Chemicals in the Environment

a. Nonpersistent chemicals
b. Persistent chemicals

B. Resource Conservation and Recovery Act - 1976; 40 CFR, Parts 260-280

1. Environmental Protection Agency and Act - background
2. New Mexico Environment Department - New Mexico Hazardous Waste Management Regulations
3. Cradle-to-Grave Responsibility

II. Regulations

A. Identification of Hazardous Waste

1. Characteristic Hazardous Waste

a. Ignitability
b. Corrosivity
c. Reactivity
d. Toxicity Characteristic Leaching Process (TCLP)

2. Listed Hazardous Waste

a. Non-specific sources (F Wastes)
b. Specific sources (K Wastes)
c. Discarded commercial chemical products

i. Acutely toxic wastes (P wastes) triple rinsing required
ii. Toxic wastes (U wastes)

B. Generators of Hazardous Wastes

1. Quantity Exclusion
2. Manifest

a. Tracking document for hazardous waste
b. Legal responsibility for information
c. Generator signature (NASA)

3. Packing, labeling, marking, placarding
4. Accumulation time
5. Biennial Report

C. Transporters of Hazardous Wastes
D. Treatment, Storage, and Disposal Units for Hazardous Wastes

1. Container Storage Unit
2. Evaporation Tank Unit
3. Open Detonation Unit
4. Waste Fuel Treatment Unit
5. Contingency Plan

E. Enforcement Actions

1. Personal Criminal Liability
2. Revocation of Generator's I.D.

Training Module #3 **WSTF Environmental Procedures**

I. Environmental ~~Section~~ Department

A. Background
B. Present Objectives

II. Environmental Procedures

A. Landfill Operation

1. Purpose and Scope

a. Outline operating procedures for NASA/WSTF landfill

i. Hazardous waste as defined in 40CFR, Part 261
ii. Salvageable materials
iii. Items unsuitable for landfill

2. Summary

a. Operated by Technical Support Department
b. No liquids or sludge
c. No scrap metal (including barrels)
d. No concrete or asphalt
e. No batteries (alkaline/carbon-zinc batteries exception)
f. No hazardous waste
g. No burning
h. Questions-contact WSTF Environmental Department

B. Waste Tracking

1. Purpose and Scope

a. Provide communication mechanism for generating department to inform contractor Environmental ~~Section~~ Department of new and existing waste streams

b. Contractor Environmental ~~Section~~ Department

i. Identifies regulatory status of waste stream

(a) Hazardous waste
(b) Non-regulated hazardous constituent waste
(c) Non-regulated solid waste

ii. Recommends proper disposal

c. Maintenance of database for all NASA/WSTF waste streams

2. Summary

a. Generating department completes waste ID sheet for all of their waste streams

b. WSTF contractor Environmental ~~Section~~ Department

i. Identifies regulatory status of waste stream

(a) Hazardous waste
(b) Non-regulated hazardous constituent waste
(c) Non-regulated solid waste

ii. Recommends proper disposal

c. Annual review of all waste streams

~~c. Freon Control~~

~~1. Purpose and Scope~~

~~a. Minimize the use of Freon~~
~~b. Control the issue of Freon~~
~~c. Maximize reclamation of Freon~~
~~d. Properly dispose of Freon~~
~~e. Prevent releases of Freon~~

~~2. Summary~~

~~a. Information provided for freon used as a solvent (not refrigerant)~~
~~b. Freon issued only by Contamination Control after approval of department manager~~
~~c. Freon must be reclaimed if possible~~
~~d. Under no circumstances is Freon to be disposed of through the sewage systems or by pouring it onto the ground~~

~~D~~C. Hazardous Waste Collection

1. Purpose and scope

   a. Implement procedures for the proper accumulation of hazardous waste and specific non-hazardous wastes by the generating departments
   b. Operation and maintenance of satellite accumulation areas
   c. Provide tracking mechanism for wastes from generation point to ultimate disposal

2. Summary

   a. Wastes to be accumulated in satellite accumulation areas
   b. Waste containers will be numbered
   c. Waste will be logged when added to container

~~E~~D. Disposal of Spent Batteries

1. Purpose and Scope - Define Procedures for Disposal of Various types of batteries used at NASA/WSTF

2. Summary

   a. Alkaline batteries - NASA/WSTF landfill
   b. Carbon-zinc batteries - NASA/WSTF landfill
   c. Lead-acid batteries

      i. Do not drain
      ii. Warehouse - reclamation

   d. Mercury batteries - hazardous waste disposal/for recycle

   e . Nickel-cadmium batteries

      i. Flashlight size - hazardous waste disposal
      ii. Large size

         (a) Drain
         (b) Hazardous waste disposal/recycle

   f. Lithium batteries - hazardous waste disposal/neutralization

g. Silver-oxide batteries - hazardous waste disposal
h. Unidentified batteries - contact the WSTF contractor Environmental ~~Section~~ Department

~~F~~E. Collection and Disposal of Used Oil

1. Purpose and Scope

a. Provide proper procedures for collection of used oil at NASA/WSTF
b. Assure hazardous waste oil is segregated from nonhazardous waste oil
c. Prevent handling of used oil at NASA/WSTF

2. Summary

a. Used oil that is not "Hazardous Waste" will be collected and handled separately from used oil that is "Hazardous Waste"
b. Oil will be collected in waste accumulation areas according to hazardous waste collection procedure
c. Warehouse will arrange for reclamation of nonhazardous used oil
d. Contractor WSTF Environmental ~~Section~~ Department will arrange for disposal of hazardous used oil

F. Waste Explosives Disposal - Open Detonation Unit

1. Purpose and Scope - Provide for proper on site disposal of explosives

2. Summary

a. WSTF Ordnance Officer will identify and dispose of all waste explosives at NASA WSTF
b. Disposal will occur at the open detonation area of the landfill

G. Operation of the Hazardous Waste - Container Storage Unit

1. Purpose and Scope - Define procedures for operation of the Container Storage Unit

2. Summary

a. All transportation of hazardous waste will be performed by certified hazardous

waste handlers
b. Doors will be kept locked, keys will be controlled by the WSTF contractor Environmental ~~Section~~ Department
c. No waste will be stored outside the facility
d. Delivery of hazardous waste ~~may~~ must be coordinated through the WSTF contractor Environmental ~~Section~~ Department

H. Operation of the Waste Fuel Treatment Unit

1. Purpose and Scope define procedures for the operations of the Waste Fuel Treatment Unit

2. Summary

a. All transportation of hazardous waste will be performed by certified hazardous waste handlers.
b. Transfers and treatments will be performed by hazardous waste handlers who are qualified for chlorine handling/fuel treatment operations.
c. Fences will be maintained and the gates will be kept locked, keys will be controlled by the WSTF contractor Environmental Department.
d. Delivery of waste fuel must be coordinated through the WSTF contractor Environmental Department.

III. Implementation of the Contingency Plan

Training Module #4 **WSTF Contingency Plan**

I. Purpose

A. Protect human health and the environment
B. Prevent and control discharges to the environment
C. Identify resources to be used to respond to discharges
D. Outline response activities in the event of an emergency
E. Reporting spills as required

II. Responsibilities

A. ~~Environmental Emergency Coordinator (EEC)~~ Emergency Response Coordinator

1. Provide site-wide coordination
~~2. Assist Area Environmental Coordinator~~
~~3. Provide regulatory guidance in emergencies to Area Environmental Coordinators~~
~~4~~2. Reporting to regulatory agencies

B. ~~Area Environmental Coordinator (AENC)~~ Incident Commander

1. Directs response activities in emergencies
2. Coordinates activities at emergency site

C. Environmental Program Manager

1. Assumes proper hazardous substance release reporting
2. Approves post-emergency cleanup and decontamination activities

III. Emergency Procedures

A. General

1. Notification
2. Risk evaluation

3. Control of immediate situation
4. Clean up activities

B. Releases from Units

1. Container Storage Unit
2. Evaporation Tank Unit
3. Waste Fuel Treatment Unit
4. Open Detonation Unit

C. Response Procedures Resulting from Unit Releases

1. Evacuation Plan
2. Fires and explosions
3. Containment activities
4. Spill clean-up
5. Decontamination procedures

IV. Locating a Copy of the Contingency Plan

Training Module #5 **Evaporation Tank Unit**

I. System Design

A. Tanks

1. Construction
2. Capacity and warning devices
3. Secondary containment and leak detection

B. Drain Lines

1. Construction
2. Layout

a. Sources
b. Valves

3. Secondary containment and leak detection

C. Drain Line Sump

1. Construction
2. Capacity and warning devices
3. Secondary containment and leak detection

II. Operation at Sources

A. General

1. Insure a profile sheet exists for the type of waste going into the hazardous waste sink drains
2. Use drains only for approved waste streams

B. Clean Room

1. ~~outdoor~~ LABCON Highbay ~~with sump~~

a. For cleaning large items
b. Solvents, caustics, acids, and water drained
c. Containerized waste drained into system ~~at sump~~

2. Indoor cleaning tanks

a. Tanks hold caustic and acidic solutions.
b. Solutions reused as much as possible
c. When drained into system, caustics and acids are not drained on same day
d. Discharges into drain lines must be logged.

C. Chemistry Laboratory

D. Metallurgy Laboratory

E. Prep Lab

F. 800 Decon Station

G. Etch Lab

H. Photo Lab

I. Environmental Department

III. Secondary Containment Systems

A. Inspections - ~~Quality Assurance, Reliability and Safety Office (QARSO)~~ the contractor Environmental Department will conduct daily inspections of the evaporation tanks, the drain lines, and the drain line sump secondary containment systems

B. Liquids Observed in Secondary Containment Systems

1. Notify contractor Environmental ~~Section~~ Department immediately
2. Leak observed in:

a. Tank

i. Switch drain line to non-leaking tank
ii. Pump fluid from leaking tank into non-leaking tank

iii. Using appropriate safety gear, repair leak
iv. Certify repairs independent,

registered, professional engineer

b. Drain Lines and Drain Line Sump

i. Inform personnel that hazardous waste drain lines will be closed (specify specific area)

ii. Isolate leaking section or component

iii. Remove and repair leaking pipe/sump

iv. Certify repairs - independent, registered, professional engineer

v. Return lines/sump to normal use mode

IV. Drain Line Valve Operation

A. Mark valves

1. When closing normally opened valves, affix tag with name of responsible person, the time and the date.
2. When opening normally closed valves, affix tag with name of responsible person, the time and the date.
3. Mark tank valves with time of initiating operation

~~B. Log all operations on drain lines~~

~~1. Logbook maintained by Contamination Control~~
~~2. All operations require QA/QC~~

~~C~~B. Inform Area When Lines Are Closed

1. When an operation requires section(s) of drain lines to be closed, notify Area
2. Area notification can occur through paging system
3. After line is repaired, notify Area that lines are open

Training Module #6 **Propellant Contaminated Waste Stream Handling**

I. Chemical Review (MSDS)

A. Fuels

1. Hydrazine
2. Monomethyl hydrazine (MMH)

3. Unsymmetrical dimethylhydrazine (UDMH)
4. Aerozine-50 (A-50)
5. Hydrogen

B. Oxidizers

1. Nitrogen tetroxide
2. Liquid oxygen

II. Personal Protective Equipment

~~A. SCAPE~~
~~B~~A. Totally Encapsulated Suits (TLC)
~~C~~B. SCBA/SPLASH

III. Waste Treatment Systems

A. Totally Enclosed Treatment Facility

1. Definition
2. Exemptions

B. Fuel Vent Treatment Tanks

1. Design
2. Operation

C. Aspirators

1. Design
2. Operation

D. Decontamination Stations

1. Design
2. Operation

~~E. Ozonation Facility~~

~~1. Design~~
~~2. Operation~~

VI. Shipment of Waste Propellant Off-Site

A. Fuel

1. Container restrictions
2. Disposal or disposal costs

B. Oxidizer

1. Container restrictions

2. Disposal or disposal cost

Training Module #7 **Hazardous Waste Container Handling**

I. Chemical Safety Review of Module #1

II. Regulations

A. Container Definition
B. Satellite Accumulation
C. 90-Day Storage Restriction
D. Permitted Container Storage Area - Drum Storage Facility

1. Design

a. Secondary containment
b. Emergency alarm
c. Capacity

2. Operation

a. Logbook
b. ~~All~~ Movement ~~inspected~~ supervised by contractor Environmental Department trained hazardous waste ~~inspectors~~ handlers
c. Aisle space
d. Waste segregation

III. Waste Container Movement

A. Proper Equipment
1. Hand truck
2. Forklift
3. Bung wrench (non-sparking)
4. Lift-gate truck
5. Radio

B. Safety Equipment

1. Gloves
2. Apron or coveralls
3. Face shield

C. Procedure

1. Notify contractor Environmental Department
~~2. Notify Quality Assurance Office~~
~~3~~2. Using appropriate equipment, load container into transport truck, retrieve logbook for

container
4. Radio contact or 2 man communication required during operation
5. Transport waste to appropriate area
6. Using appropriate equipment, unload container
7. Turn logbook for container into WSTF contactor Environmental ~~Section~~ Department

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Training Module #8 **Hazardous Waste Shipments**

I. Packaging and Labeling

A. DOT Requirements - 49 CFR
B. EPA Requirements - 40 CFR
C. Hazardous Waste Labeling

II. Uniform Hazardous Waste Manifest

A. General

1. Tracking document for all hazardous waste from "cradle to grave,
2. Legal liabilities

B. Generator
C. Waste Description
D. Hazard Class
E. Quantities
F. Special Handling Notes
G. Signature

III. Placarding of Transport Trucks

IV. Coordination On Site

A. Contractor Environmental ~~Section~~ Department
B. Contractor Purchasing ~~Department~~ Section
C. Warehouse

Training Module #9 **Waste Analysis Plan**

I. Scope

A. Definitions

1. Regulated hazardous wastes
2. Non-regulated wastes with hazardous waste constituents

B. Wastes Covered - Regulated Hazardous Wastes

II. Generation Information

A. Physical Description
B. Specific Gravity
C. Ignitability
D. Composition
E. pH

III. Management Analyses

A. Fingerprint Analysis

1. Parameters

a. Physical description
b. Specific gravity
c. pH

2. Frequency checked

a. Container Storage Unit
b. Evaporation Tank unit
i. 55 gal/yr or more
ii. Other critical wastes

B. Evaporation Tank Unit Analysis

1. Parameters
2. Frequency

C. Additional Analyses Could be Requested or Required

D. Analytical Methods

1. Sources

a. EPA-SW-846
b. American Society of Testing Materials (ASTM)
c. WSTF laboratory job instruction

2. Methods must be accepted by regulatory agencies

E. Sampling
~~F. QA/QC Program~~

Introductory and Refresher Training

Each employee covered by the plan will receive training in those training modules relevant to his or her job responsibilities. New employees complete training within six months of their

effective date of employment, or within six months after being given a new assignment or reassigned position. New employees are closely supervised and work closely with a trained technician for the first 6 months of their new assignments.

Annual refresher training courses are required for each employee assigned to hazardous waste handling activities. Selection of the appropriate refresher training course(s) for each employee will be customized to his or her particular work activities. Determination of which courses will be required will be made by the Environmental Training Coordinator.

Employee Job Descriptions

This section details which job titles require which training modules. Job descriptions and minimum course training requirements for those positions connected with hazardous waste management are given below, along with any additional training requirements which have been identified for that position.

NASA Environmental Program Manager ~~(EPM)~~

Minimum Qualifications*

1) Education: four year degree from accredited college or university

2) Experience: five year, minimum two year minimum in environmental compliance

Responsibilities

1) Establish and ensure implementation of the WSTF Environmental Compliance Program (compliance with all state and federal requirements)

2) Direct the technical activities of the WSTF support contractor environmental organization

3) Manage overall site environmental budget

4) Manage site environmental compliance projects

5) Coordinate the Environmental Compliance Program with off-site organizations including the USEPA, New Mexico Environment Department and White Sands Missile Range

Serve as the primary point of contact on matters of environmental regulations, policy, and programs

6) Review, coordinate, and approve all operating procedures and work authorization documents issued by the WSTF Environmental Department

7) Be responsible for the submission of all permit applications as required by environmental regulations

8) Be responsible for providing interpretations of environmental laws and regulations

Minimum Training Requirements

Training modules #2, #3, #4, #8, and #9 (Table II-4-1) or a course (government or commercial) dealing with hazardous materials incident response.

~~Environmental~~ Emergency Response Coordinator ~~(EEC)~~

Minimum Qualifications*

1) Education: four year degree from accredited college or university in science or engineering

2) Experience: one year minimum

Responsibilities

1) Act as an advisor on environmental matters to any WSTF individual authorized to manage emergency situations which could have adverse environmental impact; if no other site individual is acting in that capacity, the WSTF ~~Environmental~~ Emergency Response Coordinator shall act as the WSTF Manager's representative to control the emergency

2) Be responsible for insuring that environmental considerations are integrated into all WSTF emergency plans

3) Be responsible for developing a site capability to effectively deal with environmental emergencies at WSTF; this shall include, but not be limited to, stockpiling of equipment and materials, arranging for the use of existing site equipment, spill notification and response procedures, and training of personnel to respond to environmental emergencies

Minimum Training Requirements

Training modules #1, #2, #3, #4, #5, and #9 (Table II-4-1) ~~and additional~~or a course (government or commercial) dealing with hazardous materials incident response

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~~**Area Environmental Coordinator (AENC)**~~

~~Minimum Qualifications*~~

~~1) Education: four year degree from accredited college or university in science or engineering~~

~~2) Experience: one year minimum~~

~~Responsibilities~~

~~1) Coordinate and direct initial cleanup operations~~

~~2) Be aware of the environmental considerations of emergency response~~

~~Minimum Training Requirements~~

~~Training modules #1, #2, #3, and #4 (Table II-4-1)~~

Environmental ~~Section Supervisor~~ Department Manager(Support Contractor)

Minimum Qualifications*

1) Education: four year degree from an accredited college or university

2) Experience: three year minimum

Responsibilities

1) Provide interpretation, direction, and guidance to all WSTF organization elements on compliance with environmental laws and regulations

2) Review and evaluate all current and proposed activities for conformance with prescribed policy, standards, and procedures; recommend necessary actions to obtain compliance; conduct annual audits to insure WSTF compliances with all environmental regulations

3) Be responsible for the shipment of hazardous waste to off-site RCRA disposal facilities; shall develop and implement a plan to periodically inspect all off-site disposal facilities used by WSTF for compliance with federal and state environmental laws and regulations

4) Be responsible for operation of RCRA permitted units that support overall site operations including the Container Storage Unit, the Evaporation Tank Unit, the Open Detonation Unit and the Waste Fuel Treatment Unit

5) Prepare procedures to implement the Environmental Compliance Program after coordinating these procedures with the cognizant organizations

6) Prepare and implement a waste minimization plan

7) Develop and implement an environmental training program for site personnel that complies with all environmental laws and regulations

8) Oversee the treatment and disposal of waste explosives; coordinate with the WSTF Ordnance Officer as required

9) Prepare and update environmental permit applications as required

10) Disseminate information on environmental matters to provide organizations sufficient information comply with the prescribed laws and regulations

Minimum Training Requirements

Training modules #2, #3, #4, #8, and #9a (Table II-4-1)

Environmental Engineer/Scientist

Minimum Qualifications*

1) Education: four year degree from an accredited college or university

2) Experience: one year technical background

Responsibilities

1) Perform duties as directed by WSTF contractor Environmental ~~Section supervisor~~ Department Manager

2) Assist WSTF contractor Environmental ~~Section supervisor~~ Department Manager in fulfilling responsibilities outlined in the above job description (See job description for the contractor Environmental ~~Section Supervisor)~~ Department Manager

Minimum Training Requirements

Training modules 1 through 9 (Table II-4-1)~~,~~ attendance at annual course or seminar which covers environmental compliance; hazardous material management or hazardous material incident response

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Environmental Training Coordinator

Minimum Qualifications*

1) Education: four year degree from an accredited college or university

(2) Experience: one year

Responsibilities

(1) Develop and implement an environmental training program for site personnel that complies with all environmental laws and regulations

2) Maintain office files to document environmental training program

Minimum Training Requirements

Attendance at annual course or seminar which covers environmental compliance, hazardous material incident response, or environmental training

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~~**Hypergolic Propellant Hazardous Waste Handler**~~

~~Minimum Qualifications*~~

~~1) Education: High school degree~~

~~2) Experience: one year minimum~~

~~Responsibilities~~

~~1) Operation of waste propellant treatment systems~~

~~2) Transfer on site containers of propellant contaminated wastes~~

~~3) Initiate contingency plan in the event of a spill~~

~~Minimum Training Requirements~~

~~Training modules #1, #2, #3, #4, and #6 (Table II-4-1)~~

Hazardous Waste Handler

Minimum Qualifications*

1) Education: High school degree

2) Experience: one year minimum

Responsibilities

1) Transfer on site containers of wastes

2) Initiate contingency plan in the event of a spill

3) Sampling of hazardous wastes

Minimum Training Requirements

Training modules #1, #2, #3, #4, #5, #6 and #7 (Table II-4-1)

Hazardous Waste Shipment Coordinator

Minimum Qualifications

1) Education: High school degree

2) Experience: one year minimum

Responsibilities

1) Coordinate off-site shipments of hazardous waste

2) Assure analysis is accomplished for WSTF waste streams sent off-site for disposal and maintain

current waste profiles

3) Act as contact point for off-site hazardous waste disposal shipments, assisting with transportation logistics

4) Prepare all requisite paperwork for hazardous waste shipments including, but not limited to, the uniform hazardous waste manifest

5) Respond to any discrepancies found on the uniform hazardous waste manifest for WSTF shipments

6) Assure transporter's truck is adequately placarded, loaded, manifested, and does not exceed legal weight limits

7) Provide escort for all hazardous waste transporters while at WSTP

Minimum Training Requirements

Training modules #1, #2, #3, #4, and #8 (Table II-4-1) or a course (government or commercial) dealing with the transportation of hazardous waste.

Hazardous Waste Sampler

Minimum Qualifications*

1) Education: High school degree

2) Experience: One year minimum

Responsibilities

1) Sampling of all WSTF contamination assessment and monitoring wells

2) Determine appropriate USEPA approved analytical methods for sample

3) Coordinate analysis of hazardous waste samples

Minimum Training Requirements

Training modules #1, #2, #3, and #9 (Table II-4-1)

Hazardous Waste Spill Responder

Minimum Qualification*

1) Education: High School degree

2) Experience: one year

Responsibilities

1) Clean-up of hazardous material spills

2) Containment of hazardous material incidents

Minimum Training Requirements

Training modules #1, #2, #3, #4, #7, and #9 (Table II-4-1)

Hazardous Waste Inspector

Minimum Qualification*

1) Education: High school degree

2) Experience: one year minimum

Responsibilities

1) Perform necessary inspections of WSTF's facilities and activities as a hazardous waste treatment, storage, and disposal facility

2) Maintain office files of required inspections for a minimum of three years

Minimum Training Requirements

Training modules #1, #2, #3, #4, #5, #6, #7, and #9 (Table II-4-1)

Figure II-4-2 shows the WSTF organization for positions listed above.

NOTE: Minimum qualifications may be waived at the option of management if, in their judgement, there exists equivalents to the stated requirements.

PERMIT ATTACHMENT II-5
SPECIAL CONSIDERATIONS FOR THE CONSIDERATION OF INCOMPATIBLE, REACTIVE AND IGNITABLE WASTES

Introduction

All permitted units at the White Sands Test Facility handle hazardous wastes that may be ignitable, reactive or incompatible. The purpose of this plan is to explain how these wastes are handled at each unit and what precautions are used in order to prevent any danger to human health and the environment.

All permitted units are located at least 50 feet from the nearest property boundary line as required in Hazardous Waste Management Regulations, sixth version (HWMR-6), Part V. Locations are such that they are far enough away from other work areas and buildings to not affect or be affected by their closest neighbors) in the case of an emergency situation.

Air monitoring is conducted prior to admittance of authorized personnel to units that have potential for toxic or explosive gas releases. Monitoring is conducted with a portable gas detector, appropriate for the situation. Whenever unsafe conditions exist, authorized personnel will be restricted from the effected area until it is safe to enter. In the presence of toxic gases, self contained suits with supplied air will be worn.

Container Storage

The Container Storage Unit ~~is a new building which will not be used for hazardous waste storage until the permit is in effect.~~has been operating since the effective date of the permit.

Various building features, consideration for the appropriate types of container and their storage placement, and precautions have been planned to promote safe working and storage conditions.

Safety features have been built into the Unit. One is a low angle concrete ramp for ease of moving containers in and out of the building and at the same time serving to help maintain adequate containment for hazardous waste fluids which could be released to the interior floor. Another feature is adequate ventilation to evacuate volatile emissions which could potentially leak from containers, and for maintaining a safe operating temperature within the building during the warmer summer months. Explosion proof lighting and electrical wiring housed in metal conduit were designed to eliminate potential ignition sources, as was the placement the fire alarm and the telephone on the outside wall of the building. In the case of a fire, the building is equipped with two 20 pound and two 5 pound dry powder (ABC) fire extinguishers mounted inside the building at locations nearest access points. The fire alarm can be

activated directly outside the building, at the nearest occupied building, 150, or from several other adjacent buildings within the 100 Area.

Considerable attention has gone into the planning for the types and care of containers that will be used for storage and selection of appropriate storage placement within the storage building. Containers are made of, or lined with materials which will not react with their intended content. Hazardous wastes or materials that are incompatible will not be placed in the same containers nor will they be placed in unwashed containers that previously held an incompatible waste. Incompatible hazardous wastes will not be stored in the same container, and containers holding incompatible materials will not be stored on the same secondary containment pallet. Wastes which are incompatible will be stored on separate pallets and in separate areas of the building. Flammable or combustible materials will be stored away from doors when possible. Sources of sparks, flame or heat are prohibited within the building due to the potential to ignite flammable materials in storage. Equipment used to access or sample drums will be constructed of non-sparking materials. During loading and unloading operations, containers will be moved to and from transport vehicles outside the building with the aid of a special truck mounted tailgate lift or a motorized forklift. Inside the building, only non-motorized equipment will be allowed for the movement of containers. No smoking signs will be prominently displayed on all sides of the building's exterior.

Evaporation Tank Unit

Prior to receiving permit status, the Evaporation Tank Unit was in use under interim status. A great deal of knowledge has been learned through monitoring and trouble shooting the system over the past years. In an effort to provide safe conditions, several precautionary measures have already been implemented as a result of gained insight. New measures will develop as their need are discovered.

Smoking or the introduction of heat sources are prohibited within the fenced area around the tanks. No smoking signs are prominently displayed on all sides of the perimeter fence.

Waste compatibility is evaluated prior to admitting individual waste streams into the tanks. Knowledge of process, provided by each on site generator, is used to determine acceptability of the waste streams. Acceptance criteria is based on chemical composition, concentration, reactivity, pH, flashpoint, volatile organic concentration, density, solubility, physical description and generation process. Guidance documents used for compatibility assessment are as follows, but not limited to: 1) Chris Manual - Hazardous Chemical Data; 2) Dangerous Properties of Industrial Materials;

3) Hawley's Condensed Dictionary; 4) Merck Index; and 5) HWMR-6, Hazardous Waste

Management Regulations. Any waste that is not acceptable for treatment in the tanks is disposed of off-site, and in compliance with State regulations.

A potential exists for hazardous waste content in the evaporation tanks to become ignitable, reactive or incompatible. In an effort to reduce this potential, all waste streams are diluted with water. This measure assures that potentially reactive or ignitable wastes remain relatively inert within the tanks, and that incompatible wastes will not generate excessive heat. Of particular concern are unwarranted toxic gas releases to the atmosphere and potential damage to the tank's containment system.

Monitoring the composition and characteristics of the diluted hazardous wastes is performed in addition to evaluating process knowledge. Samples are collected and analyzed on a scheduled basis, and in accordance with other parts of this Permit. Whenever undesirable effects are discovered through monitoring, proper action can and will be taken to mitigate the problem. By experimenting with closely spaced sampling frequencies in the past, the Environmental Section has been able to determine less frequent sampling intervals that will not threaten the integrity of the monitoring program's intended purpose.

Open Detonation Unit

The Open Detonation unit has been operating since the 1960's. No monitoring was conducted at the unit until 1988 when it became a requirement for facilities to supply Part B application information for permit status.

Potential hazardous wastes that remain in the unit are explosive residues in the form of organic compounds and heavy metals. Unless the treatment/disposal operation is in progress, all explosives and detonators are stored at another part of the facility.

Location of the unit is remote to the rest of the facility and it is located within and on the eastern edge of the solid waste landfill. A perimeter barbed wire fence surrounds the entire landfill and access is obtained through a lockable gate which is secured only during detonation operations. At that time, all unauthorized personnel are restricted from the landfill. The open detonation trench is also surrounded by a barbed wire fence and the access is obtained through a ranch style barbed wire gate. no smoking and no admittance signs are posted as required.

Detonation procedures are conducted in accordance with standard safety practices for the types of explosive that are being permitted. A copy of these practices appear in Permit Attachment

V-2.

Waste Fuel Treatment Unit

The Waste Fuel Unit is in the process of being constructed, but it will not be put into operation before being permitted. Treatment procedures for the waste fuel is in accordance with the manufacture's recommendations. Detail knowledge about the treatment equipment and process has been learned from previous accumulation tank treatment conducted at the facility.

Hazardous wastes fuels received at the unit consist of rocket fuel (hydrazines) remaining after completion of experimental testing. Concentrations are lowered by dilution, if necessary, to one percent or less prior to or during their introduction to the holding or treatment tanks. This assures that all waste fuels are rendered non-reactive and non-ignitable. Reduction in concentration also helps to control the temperature during treatment.

PERMIT ATTACHMENT II - 6

CONTINGENCY PLAN

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for the Contingency Plan

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Appendix 1 Floor Plan of Buildings Nearest Permitted Units Showing Locations of Fire Alarms, Electric Supply Pull Boxes and Fire Extinguishers

Appendix 2 Chemical Hazard Information

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Appendix 1 Floor Plan of Buildings Nearest Permitted Units Showing Locations of Fire Alarms, Electric Supply Pull Boxes and Fire Extinguishers

Appendix 2 Chemical Hazard Information

Introduction

Purpose

The purpose of this plan is to establish procedures, delineate responsibilities and provide planning guidance for the following:

a. The prevention and control of discharges of hazardous waste or hazardous waste constituents to air, soil or surface water;

b. Identification of resources to be used to clean-up discharges at WSTF (e.g. chemical absorbents, personal protective equipment);

c. The response activities to be conducted in the event of an emergency;

d. The protection of human health, property and the environment; and,

e. Reporting spills as required.

This plan will be implemented immediately in the event of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

Definitions

Emergency - A fire, explosion, or release of hazardous waste or hazardous waste constituents, which could threaten health, environment or property.

~~**Emergency Response Team** - A team made up of on site personnel who have been trained in emergency response.~~

Environment - All surface waters, ground water, drinking water supply, land surfaces, below ground surfaces (geology) and ambient air.

First Responder - The first certified emergency response team member to arrive on site at an emergency.

Hazardous Materials (HAZMAT) Response Team - A team made up of on site personnel who have been trained in emergency response.

Incident Command System (ICS) - The command system based on a nationally recognized system for managing critical situations, which includes the following characteristics: (1) common organizational structure; (2) common terminology; (3) uniform and consistent procedures; and (4) coordinated communications.

Release - Any unplanned spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

a) Emergency Release

A release of a hazardous substance that occurs outside of WSTF controlled work areas, or within WSTF controlled work areas, goes beyond the scope of the local area emergency procedures, controls, or resources.

b) Incidental Release

A release of a substance that can be handled within the scope of the local area emergency procedures, controls, and resources.

Reporting Spill - Any release (other than those acceptable to regulatory agencies) into the environment of a listed hazardous substance in quantities greater than or equal to the listed quantities found in 40 CFR 302 (refers to the National Emergency Response Center, the NM State Police and the NMED), any release of hazardous waste which could threaten human health or the environment, or any release of hazardous waste from a permitted unit.

Operations

Response to the release of a hazardous substance at WSTF will be as follows:

a. The local area or worksite will exercise their emergency procedures which identifies the responsible person in charge.

b. The responsible person in charge will assess the situation, and, if it is an incidental release, will perform control and cleanup with appropriately trained personnel equipped with appropriate personnel protective equipment.

c. If the incident is beyond the control of local personnel and resources, then the HAZMAT response team will be called.

d. A formal handover of command from the local area person in charge to the Incident Commander must take place before the Incident Command System defined in this document is exercised.

e. The local area person in charge becomes an advisor to the Incident Commander.

The following will be implemented in the event of an emergency release or spill of any hazardous substance (HAZMAT response), in the following phases:

a. Phase I, Initial Response: Identification and containment of hazardous substance releases. Includes the following actions to save lives, reduce injuries, and protect the environment: evacuation of nonessential personnel; cordoning off the danger area; performing fire and rescue operations; stopping the release if possible; preventing the spread of the released material into the environment.

b. Phase II, Recovery of Released Hazardous Substances: In this phase, cleanup operations and recovery of the spilled substance and materials contaminated by the release is performed.

c. Phase III, Short-and-Long-Term Site Restoration (Post-Emergency): The removal of contaminated soil, site restoration to permit personnel to resume normal activities, and to prevent further contamination of the environment.

The WSTF HAZMAT Response Team will consist of all WSTF Fire Department professionals and selected personnel from the operational areas, trained to the HAZMAT Technician level. The WSTF Fire Department is responsible for the HAZMAT Response Team training and equipment. They will perform phase I and phase II activities. WSTF's HAZMAT response coverage is provided full-time, 24 hours a day.

Within the WSTF hazardous test areas, supervisors are responsible for writing plans for the initial phase I emergency response actions to safe the test systems, alert personnel, and evacuate of personnel to safe places of refuge. The HAZMAT Response Team will be called in when it is determined by the local area person in charge that the condition constitutes an emergency. Incidental spills will be handled and controlled by appropriately trained personnel within the area.

In addition to phase I and phase II activities, the NASA Environmental Program Manager and the contractor Environmental Department are responsible for approval and oversight of phase III remediation activities. Operational area personnel will assist in the cleanup operations.

~~**Spill Response Team**~~

Responsibilities

All persons appearing on the list of emergency coordinators (Table II-6-1) are persons with a minimum of one year experience

in the areas for which they are involved. They have the authority to commit necessary resources in the event of an emergency. Their responsibilities are described below.

~~Emergency Coordinator (EC) - The official predesignated by the NASA WSTF Manager to act as an emergency response commander. The specific response actions to be taken in the event of an emergency will be determined by the EC, utilizing environmental information provided to him by the EPM and the AENC. He will coordinate and direct the actual emergency activities. He is typically head of the Quality Assurance, Reliability and Safety Office because of familiarity with availability of resources and his first hand knowledge of emergency response. In the chain of command, the EC is directly responsible to the WSTF Manager.~~

~~Environmental Program Manager (EPM) - The official predesignated by the NASA WSTF Manager who will act as an advisor on environmental matters to the EC. This person is the contact to the regulatory community and other outside agencies. The EPM will also be responsible for fulfilling the notification requirement referred to in this plan. In the chain of command, the EPM is directly responsible to the WSTF Manager.~~

~~Area Environmental Coordinator (AeNC) - The official predesignated by the NASA Manager for his familiarity with specific wastes streams in the affected Area of the facility and his ability to provide specific chemical information to the EC. After the Emergency Response Team has completed their work, the AENC will coordinate activities of the Spill Response Team in completing the task of waste clean-up. In the chain of command the AENC is responsible both to the EC and the EPM.~~

~~The NMED will be notified within 90 days of any personnel changes which effect the Emergency Coordinator List~~

a. The WSTF Manager will approve the selection of an Emergency Response Coordinator and provide necessary resources to maintain a competent emergency response capability in accordance with 29 CFR Part 1910.120.

b. NASA Office Chiefs are responsible for providing appropriate personnel to be trained in emergency response roles and comprise the HAZMAT Response Team; assuring that personnel under their jurisdiction are appropriately trained in the hazards associated with their operations; assuring that emergency procedures are established for local area employees to perform emergency shutdown, evacuation and other initial control functions.

c. The Emergency Response Coordinator (ERC) has overall responsibility for the WSTF emergency response program defined in this Plan; approves equipment purchases for HAZMAT response; performs critique of mock exercises and emergency responses, and reports findings to the NASA WSTF Safety Officer; reviews, with the contractor safety department, the emergency response plan on an annual basis for adequacy; develops a schedule for subsequent procedural changes to the plan in consultation from the NASA and contractor safety departments; and develops budget requirements for emergency response in conjunction with the contractor safety department.

d. The NASA Environmental Program Manager (EPM) assures proper reporting of hazardous substance releases; assists the Emergency Response coordinator in critique of emergency responses; approves of post-emergency cleanup and decontamination activities; provides oversight of the contractor Environmental Department; reports releases of hazardous substances in compliance with EPA, OSHA, and New Mexico Environment Department reporting requirements.

e. The Contractor Environmental Department will provide a personnel to serve as advisor to the Incident Commander during emergency response incidents; advises Warehouse personnel when requested for hazardous substance replaces in the warehouse; supervises post-emergency (phase III) spill cleanup activities.

f. The NASA Safety Office will review the results of all HAZMAT responses and mock exercises; act as an advisor to Incident Commander during emergency incidents; and assists the contractor safety department in determination of PPE and emergency response equipment.

g. The WSTF Industrial Hygienist acts as a consultant to the Emergency Response Coordinator for all OSHA-related issues; acts as an advisor to the Incident Commander during emergency response activities; assists the NASA WSTF Safety Officer in determination of appropriate PPE and emergency response equipment; and acts as an advisor to the contractor Environmental Department during cleanup operations.

h. The Contractor Program Assurance Department serves as the central point-of-contact for HAZMAT response (WSTF Emergency Center); maintains the budget for training, equipment, and supplies needed for HAZMAT operations; coordinates and approves training activities; maintains and provides emergency medial and firefighting capability for WSTF; will approve, along with the NASA Emergency Response Coordinator, proper PPE and emergency response equipment; and assists the Emergency Response Coordinator in determining corrective actions and procedural changes to prevent spill recurrence and improve emergency response.

i. The WSTF Fire Chief serves as one of the Incident Commanders during HAZMAT responses; is responsible for maintaining emergency response equipment; and acts within the ICS during emergency response events.

j. The WSTF Ordnance Officer will serve as an advisor to the Incident Commander for any incident involving ordnance.

k. Area Supervisors are responsible for training personnel in local area hazards, emergency procedures and incidental spill cleanup; training personnel in completion of spills reports; reviewing area procedures for adequacy in the event of an emergency release; and assists the Incident Commander, where possible, during HAZMAT responses in their areas.

l. Security Guards will assist in traffic control and deny entry of vehicles into evacuation zones and may also assist in evacuation when requested.

m. Public Affairs Officer will be the point-of-contact for any off-site news bulletins concerning hazardous releases. The news releases must have the approval of the WSTF Manager before release.

n. Fire Wardens are assigned to all occupied buildings at WSTF. During fires and other emergencies, Fire Wardens assist in safely evacuating employees from buildings and directing them to safe refuge areas.

o. Auxiliary Firefighters have been trained to support the fire department during major emergencies. Under fire department supervision, the auxiliary firefighters are responsible for both fire and basic medical support.

p. Incident Commanders have ultimate authority and command during emergency responses. They are responsible for coordination of activities during emergency responses. They have the authority to commit the necessary site resources, including equipment and manpower, to mitigate the emergency situation. Following emergency events, Incident Commanders report to the Emergency Response Coordinator.

q. Hazardous Materials (HAZMAT) Response Team is responsible for responding to releases or potential releases of hazardous substances in order to favorably change the outcome of the release. They have the training necessary to perform offensive actions: approaching the point-of-release in order to plug, patch, or otherwise stop the release.

Table II-6-1 Emergency Response Coordinators List				
Emergency Response Coordinator (ERC)				
	NAME	WORK NO.	HOME NO.	PAGER NO.
Primary	~~J. Nelson~~ R. Reynaud	~~524-5281~~ 524-5281	~~524-0663~~ 382-5606	~~None~~ 5281
Alternate	~~T. Hogge~~ S. Carr	~~524-5230~~ 524-5216	~~522-5314~~ 522-8267	~~5230~~ 5217
Environmental Program Manager (EPM)				
	NAME	WORK NO.	HOME NO.	PAGER NO.
Primary	D. Amidei	524-5517	523-4495	None
Alternate	P. Pache	524-5462	382-8643	5462
~~Second Alternate~~	~~C. Wolf~~	~~524-5152~~	~~526-3833~~	~~5152~~
~~Area Environmental Coordinator (AeNC)~~				
~~**100, 300, 400, 500, and 700 Areas**~~	~~NAME~~	~~WORK NO.~~	~~HOME NO.~~	~~PAGER NO.~~
~~Primary~~	~~I.D. Smith~~	~~524-5524~~	~~522-3449~~	~~5524~~
~~Alternate~~	~~J. Mulholland~~	~~524-5516~~	~~527-4611~~	~~5516~~
~~Second Alternate~~	~~D. Gorham~~	~~524-5141~~	~~523-9005~~	~~5141~~

~~200 and 800 Areas~~	~~NAME~~	~~WORK NO.~~	~~HOME NO.~~	~~PAGER NO.~~
~~Primary~~	~~H. Johnson~~	~~524-5725~~	~~522-8137~~	~~5725~~
~~Alternate~~	~~D. Baker~~	~~524-5605~~	~~526-5480~~	~~5605~~
~~Second Alternate~~	~~H. Beeson~~	~~524-5542~~	~~521-0960~~	~~5542~~

Incident Commander			
NAME	WORK NO.	HOME NO.	PAGER NO.
S. Carr	524-5216	524-8267	5217
D. Amidei	524-5517	523-4495	None
C. Mabry	524-5641	524-4425	offsite 1-800-539-5512
D. Aranda	524-5641	524-4432	None
B. Beaher	524-5641	521-1087	None

~~Organization and Duties~~

~~The Emergency Coordinator will establish a command post for specific response to a spill and receive input from all WSTF responsible groups and make decisions on clean-up methods and resource allocations.~~

~~The on site contractor will provide an Emergency Response Team trained in the cleanup of spills of hazardous substances.~~

Personnel Roles and Lines of Authority: An Incident Command System (ICS) will be employed by WSTF for responses to emergency releases of hazardous substances. The system will consist of:

a. First responders (Levels I and II) who respond to emergency releases in a defensive fashion and activate the emergency response sequence;

b. HAZMAT technicians and specialists (Levels III and IV) who act to stop and mitigate the emergency release; and

c. Incident commanders (Level V), who will assume control of the incident scene.

There are two levels of first responder: Level I, awareness level and Level II, operations level. The first responder at the awareness level is trained to recognize a hazardous substance release and to initiate an emergency response sequence by notification of the proper authorities. The first responder at the operations level (Level II) is trained to respond to a release in a defensive fashion without actually trying to stop the release.

a. Hazardous materials technicians (Level III) are trained to aggressively stop the release or potential release of hazardous substances. They contain, control and confine the release using the resources and protective equipment available. Hazardous materials specialists (Level IV) respond with and support hazardous materials technicians. They receive the same training as HAZMAT technicians, but have duties that require a more specific knowledge of the substances they may be called upon to contain.

b. Incident commanders (Level V) are trained to assume control of the incident scene and implement the ICS. They are given the authority to request any resources necessary to mitigate the hazardous release incident.

During a HAZMAT response, the senior Emergency Response Official (with respect to the OSHA training levels defined above) at the scene takes control of the incident. If the senior official deems the current response adequate, the cognizant on-scene official may continue command activities. Personnel give command of the incident have the authority to take all necessary actions to stop or lessen harm to personnel, property and the environment. The ICS structure is designed so that the Incident Commander communicates with as few personnel as practical so he does not get overloaded with information. Supporting the Incident Commander is a command staff, and the logistics, planning and operations sections. The command staff as shown includes the Safety Official, Industrial Hygienists, and the Area Supervisor-in-Charge. It may or may not include all those officials in an emergency incident; only those necessary to support the Incident Commander. The Incident Commander, at his discretion, may designate personnel on the command staff to liasion or logistics functions.

The operations section is the hand-on portion of the WSTF ICS. It consists of the fire department and medical; portion, the HAZMAT response portion, and the test area systems operators portion. The fire department and medical portion at WSTF is contained within the emergency center. The test area systems operator part may include panel operators, test conductors, mechanical and electrical technicians, and other personnel who have particular knowledge of test systems, facilities or equipment involved in an emergency incident.

~~Coordinated Emergency Services~~

~~All emergency response activities will be directed by the NASA EC. In the event outside support is required, the EC will maintain authority over response activities.~~

Training

~~All personnel involved in spill response have received specialized training as outlined in the Training Plan, Permit Attachment II-4, Training Plan.~~

Employees assigned to the personnel roles described above will receive training in accordance with 29 CFR Part 1910.120(q)(6). Training records will be maintained in the site support contractor training and certification plan. Refresher training in accordance with 29 CFR 1910.120(q) will be required annually for these certifications.

Contingency Plan Distribution

The Contingency Plan will be distributed as follows. Any changes to the original will be followed up with a change notice or revised copy to all Contingency Plan holders.

Distribution and locations of the Contingency Plan is as follows:

WSTF Site Copies:

Original Copy - NASA WSTF Manager's Office
WSTF Environmental Emergency Coordinator
On site Contractor's Environmental ~~Section~~ Department
Fire Department
200 Area Office Chief
300 Area Blockhouse
400 Area Blockhouse

800 Area Control Room

Off-site Copies:

White Sands Missile Range, White Sands, NM
Memorial General Hospital, Las Cruces, NM
Dona Ana Sheriff's Department, Las Cruces, NM
New Mexico State Police, Hazardous Material Emergency Response Division, Santa Fe

In the Part B RCRA Application and RCRA Permit:

New Mexico Environment Department, Hazardous and Radioactive Materials Bureau, Santa Fe, NM
United States Environmental Protection Agency, Region VI, Dallas

Amendment of Plan

It is the responsibility of the ERC to review the Contingency Plan and amend, if necessary, whenever:

a) The facility permit is modified;

b) The plan fails during a test run or in an emergency;

c) The facility design, construction, operation, maintenance or other circumstances change to increase the potential for fires, explosions, or release of hazardous waste or hazardous waste constituents or changes in the response necessary in an emergency;

d) The list of emergency coordinators changes; or
e) The list of emergency equipment changes.

A request for a permit modification must be sent to NMED and EPA concurrently with the change. Whenever the plan is changed, all parties identified on the Contingency Plan distribution listed above will also receive copies of the changes.

Preparedness and Prevention

Internal Communications and Alarm Equipment (264.32(a))

All inhabited buildings at WSTF are equipped with telephone communication and fire alarm systems. Pull box alarms are available and accessible in buildings near the hazardous waste management units (Figures II-6-1 and II-6-2). Pull box alarm locations, for those buildings located nearest the hazardous waste units, are indicated in Appendix 1. In the case of an emergency, facility personnel will be notified through public address system announcements, siren wails or fire bells.

External Communications and Alarm Equipment (264.32(b))

Any site telephone may be used to summon emergency assistance from WSTF security, fire and emergency response teams. The Emergency Center, in addition to telephones, maintains a radio system which is capable to summoning assistance.

When a pull box alarm is used, an alarm signal is sent to the Emergency Center in Building ~~112~~104. If the emergency involves a fire or potential fire, and off-site assistance is required, it can then be summoned by telephone.

Telephone communication is provided by U.S. West. Telephones are located at the 100 Area Container Storage Unit, at the 200 Area Evaporation Tank Unit (evaporation tanks), at the 500 Area Waste Fuel Treatment Unit~~,~~and in ~~every~~all occupied buildings~~, and in marked boxes along the access road~~. The Emergency Center is immediately alerted by either lifting the receiver or by dialing 5111, depending on the type of phone.

Additional communications are provided by the use of hand-held and mobile two-way radios. In addition to the extensive telephone network available for internal and external communications, WSTF maintains 4 dedicated radio frequencies. The security personnel, the Emergency Services Center, Fire Department and personnel operation at the 700 Area Open Detonation Unit are all equipped with hand-held or mobile radios which can be utilized in the event of an emergency.

Fire Control Equipment and Procedures (264.32(c))

WSTF fire protection is provided by the use of fire hydrants, fire extinguishers, hose racks, and an on site Fire Department. Fire hydrants and water supply risers are located 700 feet south of the Container Storage Unit; there is another one adjacent to the Evaporation Tanks Unit (evaporation tanks); and one at the Waste Fuel Treatment Unit. The Container Storage Unit is located one half mile north of the WSTF Fire Department and is equipped

with fire extinguishers and a communication system that can be used to notify the appropriate personnel in the case of an emergency. All fire hydrants and fire protection water risers are inspected semiannually by the WSTF Fire Department for static pressure, flow pressure and water flow.

The WSTF Fire Department can respond with three fire trucks/pumpers in the event of an emergency. Each pumper truck carries ~~500~~from 400 to 750 gallons of water and has an operating pressure of 150 psi. Two of the trucks pump at a rate of ~~750~~1000 gallons per minute and are capable of operating two 2 1/2-inch fire hoses. The other truck delivers ~~1,000~~750 gallons per minute and can operate five 2 1/2-inch fire hoses. Each vehicle's operational status is checked daily and preventive maintenance is conducted on a weekly basis. Additionally, each pumper is back-flushed semi-monthly.

Portable fire extinguishers are present throughout WSTF. Fire extinguisher locations and types, for buildings near the hazardous waste units, are found in Appendix 1.

Fire control vehicles have an unobstructed path to all hazardous waste management areas and emergency procedures restrict access to authorized vehicles and personnel.

Spill Control and Equipment (264.32(c))

The WSTF contingency plan employs a ~~spill~~ hazardous materials (HAZMAT) response team~~, which is provided by the Environmental Section,~~ that responds immediately to emergencies. The team is made up of professionals with experience in supervision, heavy equipment operations, fire fighting, safety engineering, contamination control, and environmental protection. This team is equipped with a portable source of self-contained breathing air, protective suits, commercial adsorbents, neutralization solutions, and assorted hand tools and containers. In the event of a spill or release at WSTF, the containment activities outlined the section on "Containment Activities" will be implemented.

A wide variety of the WSTF heavy equipment can be utilized for containment and clean-up in the event of a hazardous waste spill. In the event of a large spill, a bulldozer, backhoe and frontend loader are available for spill control.

Temporary storage tanks, portable pumps and hoses can be used to transfer and provide temporary storage for spill materials.

Absorbents and temporary construction materials, such as soil, sand and gravel, are readily available at WSTF. Other materials such as emulsifiers, specialty adsorbents, and containers can be obtained immediately from a central on site spill response stockpile. WSTF also maintains numerous hand tools, such as

shovels and rakes, which can be utilized in the event of an

emergency. There is also a wide variety of protective clothing with breathing apparatus for personnel who may become engaged in spill control and clean-up operations. See Table II-6-2 for a complete list of spill control equipment.

Table II-6-2 Emergency Response Materials		
Equipment	WSTF Location	Capabilities
3 Fire Truck/Pumpers	Building 112	500 gallons
Rescue Vehicle	Building 112	
2 ea Ambulance	Building 112	
Bulldozer	Landfill	
Cranes, Mobile (10-ton, 30-ton)	150 Yard	10 ton, 30 ton
Backhoe	Building 113	
2 ea Dump-Truck	150 Yard	
Diesel Semi-Truck	150 Yard	20 tons
Low-boy Trailer	150 Yard	6000 gallons
Tanker Trailer	150 Yard	
Forklift	All Areas	
4" Pump - Portable Wheel-mounted, high-equipped	100 Area Sewage Lagoon	100 GPM
3 ea Heat Resistant FireKing Fire Suits	Building 112	
Sand	Site	
Livestock Storage Tanks	150 Yard	1000 Gallons
Hoses	Building 112	6000 feet
Polyurethane Foam	Building 112	
a. AFFF Alcohol Type		
b. Protein base		

~~Personnel Protection Equipment:~~	~~Safety Crib Building 120~~	
~~-- Hard Hats~~		
~~-- Goggles~~		
~~-- Safety Glasses~~		
~~-- Face Shields~~		
~~--Splash Suits~~		
~~--Totally Encapsulates Suits~~		
~~-- SCBA's~~		
~~--Chemical Cartridges~~		
~~--Respirators~~		
~~--Escape Masks~~		
~~--Assorted Gloves~~		
~~Spill Pillows~~	~~Warehouse~~	
~~Shovels~~	~~Facilities~~	
~~Rakes~~	~~Facilities~~	
~~Rope and Line~~	~~Warehouse~~	
~~Drums~~	~~150 Yard~~	
~~Salvage Drums~~	~~150 Yard~~	
~~Drum Hoist~~	~~Facilities~~	
~~Bung Wrench~~	~~Container Storage Unit~~	
~~Hand Pumps~~	~~Warehouse~~	

Table II-6-2, EMERG. Y RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Fire Extinguishing/Rescue:		**Location: Building 104**
1 Fire Truck/Pumper	Darley Class A Pumper	1000 GPM, 500 gal. storage tank, firefighter equipped
1 Fire Truck/Pumper	All-wheel drive Darley Class A Pumper	1000 GPM, 750 gal. storage tank, firefighter equipped
1 Fire Truck/pumper	Military Class A Pumper	750 GPM, 400 gal storage tank, firefighter equipped
1 Ambulance	GSA Chevy Van 30 Type 2	Fully equipped - EMT manned
1 Ambulance	GSA Ford Econoline Type 2	Fully equipped - EMT manned
Transport Vehicle	Ford w/enclosed box	Transport men and materials
3 Fire Suits	FireKing	Heat resistant
2 Harness	Confined Space	Entry/rescue
Polyurethane Foam	AFFF Alcohol Type	Alcohol fire suppression
Spill Control (Spill Response Trailer Unit)		**Location: Building 104**
Pick up Truck	3/4 Ton	Hitch equipped for towing trailer and transport of equipment.
Spill Response Trailer	Enclosed 12'x 6'10" x 6' tandem-axle	Response equipment transport
1 Generator	7000 Watts, 120/240 Volts, electric start	Illumination during night-time operations
1 Gas Detection Monitor	Toxic, combustible, O_2, H_2S gas detector	Monitor confined spaces, toxic atmospheres, and deconned PPE
4 Portable Lights	Quartz w/wire lens guard	500 Watt illumination
4 Personal Protective Suits	Level "A"	Used for max. protection

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
4 Personal Protective Suits	Level "B"	Level "A" equal except skin
4 SCBA breathing air bottles	4500 psi	45 min/1 hr air supply
12 Thermal Vests	Pocketed for cold packs	Heat stress protection
1 Pump	¾ HP explosion proof electric motor	Flammables transfers
Plug/Patch/Repair		
-2 Non-sparking Tool Kit	Hand tools coated w/ non-sparking material	Drum/container patching and contamination containment
-1 Drum Patch Kit	Screws/plugs/stoppers	"
-1 Pipe Patch Kit	Neoprene lined clamps w/wrenches	" (Liners available for compatibility)
-1 Tank Repair Kit	Patches, adjustable chains/straps	"
-1 Box Pipe Wrap	Chemical resistant patching material	"
-2 Boxes Response Stik	Chemical resistant patching material	"
-4 Bung Wrenches	Non-sparking	Leak/contamination control
-1 Tool Kit	Hand tools, plugs and patching material	Designed for compatibility w/site chemicals
1 Drum Deheader	Forged steel w/steel blade	Contamination containment and removal
1 Vacuum Cleaner	Stainless steel, wet/dry	15 gallon w/filters
1 Bucket	Stainless steel 3 gal.	Chemical compatibility w/site wastes
1 Bucket	Plastic w/top 5 gal.	Chemical compatibility w/site wastes
1 Shovel	Plastic	Flammable waste collection

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
1 Mop w/4 Mop heads	Chemical sponge	Spill absorption
2 Pink Absorbent Socks	10' long by 8" diameter	Caustics, acids and solvents
12 Pink Absorbent Socks	46" long by 3" diameter	Caustics, acids and solvents
8 Blue Absorbent Socks	46' long by 3" diameter	Caustics, acids and solvents
50 lbs. Clay Absorbent	Clay spill dry	Liquids and petroleum products
200 Blue Paper Towels	12" X 12"	Spill absorption and clean up
2 Pair Binoculars	10 X 50 Power	Remote spill response determination
5 Flashlights	Hazardous atmospheres	Illumination
10 Safety Vests	Fluorescent orange	Response Team ID.
10 Safety Cones	Restricting area labeled	Spill Area ID
2 Signs	Red on white free standing	Spill warning
2 Face Shields	Chemical Resistant	Corrosive and splash protection
2 Aprons	"	Level "C" protection
3 Pair Safety Glasses	"	Level "C" protection
10 Pair Gloves	Plastic	Chemical resistant
20 Pair Boots	Hazmat	Chemical Resistant Steel Toe/Midsole
12 Pair Boots	Tyvek	Chemical resistant
1 Coveralls	Polylaminated Tyvek	Chemical resistant
5 Coveralls	Tyvek	Chemical resistant
1 Drum Truck	Self-standing w/polyolefin wheels	30/55/85 gal drum transport

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Spill Control Heavy Equipment		**Location: 150 Yard or Landfill**
Vacuum Trailer	Gasoline powered - 1000 gal. capacity	Spill containment/transfer
Pickup	4x4 3/4 Ton	Equipped to pull vacuum trailer
Bulldozer	D8L Catepiller	Diversion, dyking and erosion control
Landfill Compactor	816 Catepiller	Diversion, dyking and erosion control
Front Loader	4.5 Cu Yd International	Earth movement
Crane	Mobile 10-ton	Equipment and container movement
Crane	Mobile 30-ton	Equipment and container movement
Backhoe	Case w/2 cu. yd. bucket	Diversion, dyking and erosion control
2 Dump Trucks	6 and 12 cu. yd. beds	Earth movement
Semi-Truck	International Diesel	Transfer trailers and equipment
Low-boy Trailer	20 tons	Transfer containers and equipment
Tanker Trailer	Stainless steel 6000 gal.	Spill containment and transfer
Forklifts (all work areas)	Various sizes	Equipment and container transfer
Livestock Storage Tanks	1000 gallons	Spill containment
Portable Pump	4" Wheel mounted 100 GPM	Waste transfers
Decon Equipment		**Location: Building 104**
1 Decon Station	3 Station poly-lined boxes w/decon shower	Easily assembled and portable
1 Open Top Container	Poly w/lid	PPE collection for decon
4 Brushes	Long handled/soft	PPE decon
Firehose w/Connections	Length 200' Diameter 2"	Perimeter for decon station
Garden Hose w/Connections	200" Diameter 5/8"	Decon shower water supply

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Plastic Sheeting	Polyethylene	Decon station containment
Neutralizing solutions	Clorox/Caustic	Decon Fuel and Ox contamination
Soil, Sand and Gravel	Naturally occurring	Diversion, dyking and erosion control
Additional Emergency Response Equipment/Supplies Available. Located in Warehouse and Related Work Areas		
Hard Hats	Polyethylene	Required in "Level A" suits
Safety Glasses	Assorted	
Goggles	Chemical resistant	Mild acids and caustics protection
Face Shields	Chemical resistant	Corrosive and splash protection
Splash Suits	PVC chemical resistant	Level "B" protection
Totally Encapsulated Suits w/airlines	ILC Dover	Airline - positive pressure, hydrazine/s and oxidizer compatible
SCBA's	MSA	30 min breathing air supply
2 Breathing air trailers	Regulated/manifolded K-bottles	Long term breathing air source
Chemical Cartridges	Assorted	Selected per PPE level and contaminant
Respirators	Airline and 1/2 mask	Selected per PPE level and contaminant
Gloves	Assorted - neoprene, butyl, Silver Shield	For compatibility w/various site known chemicals
Spill Pillows	Assorted	Spill absorption
Clay Absorbent	15-25, 50 lb. bags	Spill absorption
Shovels		
Rakes		

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Rope and Line		
Drums	30/55 gal.	Spill containment
Salvage Drums	85 gal.	Overpacking and decon
Drum Hoist	Hydraulic boom, Perfect Tinning Corporation	Drum transfers and overpacking
2 Drum Slings	Cable - proofed to 500 and 1000 lbs.	Drum transfers and overpacking
Hand Pumps	Chemical resistant	Spill transfers

Decontamination of Equipment

If a spill should occur, all contaminated equipment will be decontaminated as a latter part of the response process. WSTF is equipped with a cleaning unit for decontamination. Post-

emergency equipment will be serviced in the "clean room" or ~~on the "clean pad"~~in the LABCON Highbay by the on site cleaning personnel. Decontamination will be accomplished with the use of biodegradable soap, hot water and steam. The resulting waste is expected to be of such a dilute nature that no incompatible reactions will occur. Typically these wastes will be transported and added to the evaporation tanks. Determination for the completeness of decontamination will be based on physical and chemical analysis of the particular contaminants.

Water Supply

Site water is provided by two drinking water wells. The water is pumped to fill a 1,000,000-gallon gravity storage tank by two 100 horsepower electric motors. The pumps lift the water 1,038 feet, from the water table to the tank, a distance of over 7 miles. The storage tank, located northeast of the main facility development, is monitored remotely by electronic gauges from the Emergency Center. Physically inspections are conducted at tank by security personnel a minimum of six times a day. Adequate volume and pressure will be maintained to efficiently operate all water supplied fire fighting equipment.

Arrangements with Local Authorities

WSTF has agreements with several outside agencies for support in the event of an emergency. In all cases, the support activities involve materials, personnel and equipment which will be released to the WSTF Emergency Coordinator for use at his discretion. These groups have been provided with a copy of this plan in order to familiarize them with the layout and possible hazards at WSTF. Details of these agreements can be found in the Permit Application, Part B.

AGREEMENTS

Dona Ana County Sheriff - Has been provided with a copy of this plan in order to familiarize them with the layout, and possible hazards at WSTF.

U.S. Army White Sands Missile Range - WSTF is on WSMR and therefore is addressed in the WSMR contingency plan. WSMR is capable of providing fire fighting, spill clean-up, and evacuation support. NASA also has an agreement with McAffee Medical Center on WSMR to provide medical assistance.

Memorial ~~General Hospital~~ Medical Center - Has been made aware of the types of medical emergencies which could result at this site.

State of New Mexico - The State does not enter into agreements with individual facilities, but does have a mandated duty to assist when notified. The State has been provided with a copy of

this plan in order to familiarize them with the layout and possible hazards at WSTF.

Emergency Procedures

General

WSTF emergencies will be reported to the Emergency Center switchboard which is manned 24 hours a day. The initial notification may be automatic, such as fire alarms or manual by telephone (Emergency Center, dial 5911 or 5111) or radio. Site tours by firemen every 90 minutes during off-duty hours assists in notification. In the event of an emergency situation during working hours there are personnel in all areas who are trained and authorized to act as first responders. The Emergency Center will still be notified and the rest of the chain of events followed even if a first responder is on scene at the time of the emergency.

The switchboard operator at the Emergency Center will concurrently: dispatch the Fire Department; notify the area specific EC for the area in which the emergency is located; and notify the EEC.

The Fire Department will act as the first responder when they arrive on scene.

The First Responder will obtain technical information about hazards (Appendix 2: Contains information on the chemical hazards of the most widely used chemicals on site), perform search and rescue as required, identify vapor clouds, establish the command post, set up road blocks, and evaluate and implement initial Containment Activities procedures and the Evacuation Plan procedures as needed.

The Emergency Center will relay the information on the type of emergency to the ~~EC~~IC and the EPM. The ~~EC~~IC will proceed to the scene of the emergency and evaluate the situation. The ~~EC~~IC will determine actions to be taken in response to the emergency. The ~~EC~~IC will maintain contact with the EPM during all stages of the emergency.

EMERGENCY PHONE NUMBERS

White Sands Missile Range	(505)	678-4187
Memorial ~~General Hospital~~ Medical Center	(505)	522-8641
NMED Emergency Response	(505)	827-9329

NOTIFICATION

National Response Center (Spills and Releases)	(800) 424-8802
State of New Mexico	(505) 827-9329

CHEMICAL INFORMATION

Chemtrec (Chemical Manufacturer's Association - Washington, D.C.)	(800) 424-9300

The ~~EC~~IC will immediately identify the character, amounts, source, and real extent of any released material. This initial assessment will be based on documentation of materials routinely managed in each area and existing physical and chemical analyses (Permit Attachment II-1, Waste Analysis Plan). The ~~EC~~IC will advise the ~~AENC~~ERC of his findings.

The ~~EC~~IC, as assisted and/or advised by the EPM, ~~and the AENC,~~ will also assess any direct or indirect hazards to human health and the environment which may result from any release due to the emergency situation. The assessment will consider such pertinent factors as Threshold Limit Values (TLV's) of chemical constituents, potential combustion by-products, potential incompatibilities and adverse reactions, and the necessity for providing adequate run-off control for both released materials and agents used in fire control, containment or decontamination efforts.

Based on this evaluation, the ~~EC~~IC will activate internal alarms as needed and request assistance as outlined in the coordinated emergency response (Permit Attachment II-4, Training Plan). The EPM will notify authorities as outlined in the section on Record Keeping and Incident Report procedures if the incident involves a reportable release. The ~~EC~~IC, as assisted and advised by the EPM, ~~and the AENC,~~ will assess the situation and decide on the materials and manpower required to respond to immediate threats to human health and the environment. The ~~EC~~IC will then notify the members of the Emergency Response Team and designate ~~a command~~an incident command post from which the operations will be coordinated.

The ~~EC~~IC will take whatever actions necessary to protect human health and the environment during the emergency. This may include shutdown of operations and commitment of resources and manpower. If operation systems are shut down, the ~~EC~~IC is responsible to see that monitoring for leaks, pressure buildup, gas generation, or rupture in valves, pipes or other equipment, wherever appropriate, is accomplished.

As soon as the immediate threat to health has been brought under control, the ~~EC~~IC will relinquish control of the clean-up effort to the ~~AENC~~EPM who will oversee the clean up of the on site contractor.

Releases From Permitted Hazardous Waste Units

This section outlines some specific considerations for the units which handle hazardous waste.

Evaporation Tanks (264.56(e), 264.194(c))

The 200 Area hazardous waste evaporation tanks at WSTF provide for leak detection and secondary containment. In the event of a double failure or handling accident, the ~~EC~~EPM will make an initial assessment of fire, explosive, toxicity hazards, and potential threat to human health and the environment~~, as previously described.~~ The Contingency Plan will then be implemented as necessary and as outlined in the first part of the Emergency Procedures section. In the event a release from a tank is suspected or documented, the ~~EC~~EPM will be immediately notified and insure that the process flow to the tank is shut-off and the waste diverted to the stand-by tank. Because both tanks have independent leak detection systems, a leak in one tank will not preclude the use of the other independent tank. Notifications will be made as outlined in the section of this plan on Record Keeping and Incident Reports.

After the initial assessment has been made, any free-standing liquid will be contained with berms to prevent any further migration and to contain any additional releases which may occur until the tank is repaired and the remaining waste is removed. Any free-standing liquid and any hazardous waste residue which remains in the tank will then be removed and placed in another tank or container and transported off-site to a permitted disposal facility. A soil assessment and clean up-will be performed as outlined in the Soil Assessment and Clean-Up Procedures portion of the plan.

During the decontamination operation, the tanks will be inspected to determine the cause of the hazardous waste leak. If the leak cannot be repaired or the tank's integrity is so impaired that it is no longer usable, the tank will be decontaminated using appropriate decontamination solutions, removed from service and the Closure Plan implemented. If the leak is repaired, the tank will be leak tested prior to returning to service.

If the tank cannot be successfully decontaminated it will be removed from its location and transported off-site for disposal at a permitted disposal facility.

Hazardous Waste Drain Lines and Drain Line Sump (264.15(c), 264.56(e))

Releases of hazardous waste would be identified during routine inspections of the drain line, drain line sump and the associated secondary containment systems. Other areas indicative of potential leaks may be where there is subsidence, damp earth surrounding equipment, or noticeable surface spills. The ~~EC~~EPM will be notified immediately and the drain line flow will be shut down. This will be accomplished with the use of an announcement over the public address system saying that the hazardous waste drain is closed to additions and the placement of signs on all drains directing personnel that the drains are closed. During the time the drain lines are closed, the waste will be held in the individual shops until the system is reopened. Notifications will be made as outlined in the Report Keeping and Incident Report section described in the latter part of this plan.

The ~~EC~~EPM will then make an initial assessment of fire, explosive, toxicity hazards and potential threat to human health and the environment. The Contingency Plan will then be implemented as needed. Upon completion of the initial assessment, any liquid or wastes remaining in the drain line or drain line sump will be drained into tanks or containers, or taken to the evaporation tanks.

If it is suspected that a release has resulted in soil contamination, measures will be implemented as outlined in the Soil Assessment and Clean-Up Procedure portion of the plan.

The drain lines and the drainline sump will be inspected to determine the cause of the hazardous waste leak. If the leak cannot be repaired or the equipment integrity is so impaired that it is no longer usable, the equipment will be decontaminated by triple rinsing. The rinsate produced in the decontamination procedure will be handled as hazardous waste and disposed of accordingly. In the event the leak is repaired, the line will be leak tested prior to being put back in service.

If the drain line(s) and the drain line sump cannot be successfully decontaminated, defective components will be removed from their location and disposed of off-site at a permitted disposal location.

Container Storage Unit (264.15(c), 264-56(e), 264.171)

Noticeable spills or free-standing liquids inside the Container Unit may be indicative of release of hazardous waste. If a release is suspected or documented, the Emergency Center will be notified immediately. The Center ~~sill~~will in turn notify the ~~EC~~EPM. Notifications will be made as outlined in the plan section, Record Keeping and Incident Reports.

Initial assessment of the fire, explosive, toxicity hazards, and the potential threat to human health or the environment will be made by the ~~EC~~EPM as described in the General portion of the plan. Subsequent to the initial assessment, any spills will be cleaned up and packaged for disposal at an permitted off-site RCRA facility.

Subsequent assessment will be made to determine if any contamination has escaped from the containment system. If contamination is confirmed, the soils will be excavated to remove all contamination by measures outlined in the plan section, Soil Assessment and Clean-Up Procedures. Contaminated soils will be disposed of at an off-site permitted disposal location.

Drums in the storage area will be inspected for deterioration, leakage or improperly secured closure devices. Any drums that are deteriorated or that cannot be sealed will have the contents removed and repackaged in serviceable drums. Unserviceable drums will be removed from service, cleaned in accordance with the Decontamination Procedures or disposed of off-site at a permitted disposal location if they cannot be decontaminated.

Open Detonation Unit (264.56(e), 264.171)

Any release of hazardous waste from the Open Detonation Unit (~~OD~~ODU) would be indicated by elevated explosive residual organics and total metals in the soil as a result of inefficient treatment (refer to the Permit Attachment II-1, Waste Analysis). If elevated hazardous wastes are detected in the soil, a soil assessment and clean-up will be performed as noted in the Soil Assessment and Clean-Up Procedures portion of the plan.

In the event of a fire involving explosives, all personnel and equipment will be evacuated to a position no closer than the entrance to the Sanitary Landfill (refer to Figure II-6-2). The fire will be observed from this position until it burns out or undergoes a transition from deflagration to detonation. A waiting period of 24 hours will be observed before explosive personnel can approach the OD Unit and assess the situation. Soils around the OD Unit, which show indications of contamination from the burning of explosives, will be managed in accordance with Soil Assessment and Clean-Up Procedures. The soil will then be analyzed for explosive residual organics and total metals as discussed in Permit Attachment II-1, Waste Analysis. Any soils exhibiting concentrations in excess of the established background will be disposed in accordance with HWMR-6.

In the event there are other emergency situation not involving fire, all unnecessary personnel will be evacuated from the OD Unit. Only the qualified personnel needed to handle the emergency and take corrective measures will remain at the site.

Waste Fuel Treatment Unit (264.56(e), 264.171)

A release of hazardous waste from the waste fuel treatment unit would be identified during routine inspections of the unit's tanks, piping and secondary containment. In the event a release from the treatment facility is suspected or documented, the ~~EC~~ERC will be notified immediately and all process equipment turned off.

The ~~EC~~EPM will then make an initial assessment of fire, explosive, toxicity hazards, and potential threat to human health and the environment as previously described. The necessary measures will then be implemented as outlined in the Emergency Procedures portion of the plan. Upon completion of the initial assessment, the waste fuel in the treatment and holding tanks will be secured by closing the tank outlet valves and if required, by transferring the waste to a tanker trailer. Any waste remaining in ancillary equipment will be drained to tanks or containers.

A subsequent assessment will be made to determine if any contamination has escaped from the containment system. If contamination is confirmed, the soils will be excavated until all contamination is removed. The extent of contamination will be assessed as outlined the Soil Assessment and Clean-Up Procedures of the plan, and to background or risk assessment levels.

The tanks and ancillary equipment will be inspected to determine the cause of the leak. If the leak cannot be repaired or the equipment integrity is so impaired that is no longer usable, the equipment will be decontaminated by triple rinsing. The rinsate produced in the decontamination procedure will be handled as a hazardous waste and disposed of accordingly. In the event the leak is repaired, the tanks or ancillary equipment will be leak tested prior to being put back in service. All waste fuel removed from the tanks and ancillary equipment will be treated and disposed of in accordance with HWMR-6.

Tanks or equipment that can not be successfully decontaminated will be removed from their location and disposed of off-site at a permitted disposal location.

Soil Assessment and Clean-Up Procedures

After a spill has been contained and all free liquid has been removed, the ~~AENC~~EPM will conduct an assessment of the contaminated soils. This assessment will include the identity of the waste streams associated with the Unit that released the contamination. This will allow the ~~AENC~~IC to determine the safety precautions that will be utilized by clean-up personnel and determine what analytical methods are appropriate for determining the extent of contamination.

Using portable monitoring instrumentation and visual observations, the soils that appear to be contaminated will be excavated. All excavated soils will be properly containerized, characterized and disposed of in compliance with HWMR-6.

After all soils that appear to be contaminated are removed from the area, a sampling grid will be developed based on the size and quantity of the spill to determine the extent of horizontal and vertical contamination. Core samples will be taken and analyzed from different locations and depths within and adjacent to the spill area. Analytical parameters will be based on the knowledge of the waste stream.

Based on the analytical results, and background or risk assessment levels, the ~~AENC~~EPM will determine if the initial cleanup removed all contaminated soils or if more excavating, sampling, and analyses are required. All equipment used for the clean-up will be washed after completing the response, in accordance with the Decontamination Procedures. Equipment that cannot be successfully decontaminated will be characterized and disposed of in accordance with HWMR-6.

Fires and Explosions (264.56(e))

In the event of a potential or actual fire or explosion at WSTF, the Emergency Center or the Fire Department will be notified through either emergency fire alarms, telephone or radio contact. The Emergency Center or Fire Department will then notify the ERC. ~~and the appropriate AENC of the Area in which the emergency exists.~~ The ERC will activate the Contingency Plan. The WSTF ~~Fire Department~~ HAZMAT Emergency Response Team will have the duty to take the necessary actions to contain and alleviate the emergency under the direction of the ~~Fire Department Chief~~ Incident Commander and ~~the command of~~ the ERC.

If flammable materials are involved in an incident and are on fire, the ~~EC~~IC will immediately:

1) Have all non-essential personnel evacuated from the affected area;

2) Ensure that the appropriate fire control measures are taken (e.g., removal of ignition sources, availability of suitable fire control agents, activation of fire suppression systems);

3) Direct containment activities (e.g., dikes, berms) to control the spread of flammable materials and potentially contaminated run-off; and

4) Ensure that all process control systems are shut off and monitored for any leaks or pressure build-up.

If flammable materials are involved and are not on fire, the ~~EC~~IC will take all steps necessary to prevent ignition or recurrence of any fire.

The primary concerns during a potential or actual fire situation, whether it involves flammable or non-flammable materials, are the spread of fire to adjacent areas, exposure of personnel to toxic gases or vapors, and the potential of contaminated water run-off due to fire control activities.

The spread, or recurrence of fire, can occur through direct impingement on neighboring structures or from movement of flammable vapors to points of ignition. The ~~EC~~IC will evaluate data on known chemical constituents in effected areas and will include such factors as flammability, vapor density, lower and upper explosive limits, wind direction and velocity, surrounding topography and possible sources of ignition when formulating emergency response activities. Possible alternatives in any fire control situation may include: water deluge on neighboring structures to prevent ignition; water mist to knock down and dissipate explosive or flammable vapors; evacuation of low lying areas where vapors may collect; and the removal of all ignition sources in potentially affected areas.

If the ~~EC~~IC determines that evacuation of surrounding areas is necessary, he shall follow the Evacuation Plan procedures included in the greater plan. The initial evacuation perimeter will be at least ~~h mile downwind~~ 2000 ft. from the effected area.

As part of the initial assessment, the ~~EC~~IC will also determine the type and level of personnel protection equipment that will be necessary for emergency response activities. Both flammable and non-flammable materials which are involved in a fire can potentially emit highly toxic decomposition products when subjected to hear or flame. As part of any emergency assessment, a thorough evaluation will be made of the potential for human exposure and the levels of personnel protection that may be required for emergency response activities. Based on known toxicities and potential combustion by-products, specified equipment may include: bunker gear; splash suits; chemical cartridge respirators; self-contained breathing apparatus (SCBA's), or; ~~SCAPE~~ILC suit ~~(self-contained atmospheric protective ensemble)~~.

To prevent run-off of contaminated water which may be used in fire control activities, the EC will evaluate the existing topography in the effected area to determine potential flow paths. If substantial amounts of water are to be used, dikes and berms will be constructed to provide containment for any runoff. After emergency response activities are completed, the contained run-off will be analyzed to determine if it is a hazardous waste and, if required, will be managed in accordance

with all applicable regulations.

Containment Activities

In the event of a spill or release of a hazardous substance, one of the duties of the first responder (Level II) is the containment of any free liquids. This is to be done with spill control booms, spill pillows, earth, or any materials available, as needed. The objective of containment activities is to first control the spread and runoff of the material, and then to absorb the contained materials to minimize infiltration into the ground.

Decontamination Procedures (264.56(h)(2))

Post clean-up decontamination of personnel will take place in a decon stations designed to prevent the spread of contamination. The clean-up personnel will wear disposable outer garments or totally encapsulated suits. Decontamination will include: the physical removal of loose contaminants using rinse water and antistatic solutions; the scraping, brushing, wiping or absorption of adhering contaminants; and the rinsing or evaporation of volatile liquids. Disposable garments will be containerized for disposal in compliance with HWMR-6 and the totally encapsulated suits will be cleaned and inspected by the WSTF contamination control facility (clean room).

WSTF is equipped with a cleaning facility for the decontamination of a wide variety of materials that are tested on site. Post-emergency equipment for decontamination can be serviced in the "clean room" or in the LABCON Highbay by the on site cleaning facility. The location for cleaning will depend upon the size of equipment contaminated. Decontamination will be accomplished with the use of biodegradable soap, hot water, and steam. The resulting waste will be of such a dilute nature that no incompatibilities will result. Decontamination will be determined by visual inspection or by analysis of the rinsate. The determination of decontamination will be based on the chemical and physical nature of the contaminant.

Decontaminated equipment will be inspected by the facilities maintenance group. Diaphragms, gaskets, seals, and other soft goods that require replacement will be disposed in compliance with HWMR-6. Protective breathing equipment is inspected and maintained by the WSTF ~~Quality Assurance, Reliability Safety Office~~ Cleaning Facility. Materials that require disposal will be restocked from with the WSTF warehouse or reordered by the WSTF Environmental Section.

Any hazardous waste generated by the decontamination process at the cleaning facility will be collected by the 200 area evaporation tanks, which services the clean room and ~~clean pad~~ LabCon Highbay. Any emergency response equipment or materials which cannot be

decontaminated at the WSTF cleaning facility will be shipped off-site for disposal at a permitted disposal facility.

Evacuation Plan (264.56(d))

Once the decision has been made to activate evacuation procedures, facility personnel will be notified by the following:

1. Fire

a. 200 and 800 Areas - Local fire bell rings continuously
b. 300 and 400 Areas - Evacuation horn is sounded

2. Liquid Spill or Release

a. 200 Area - Public address announcement
b. 300 and 400 Areas - Public Address Announcement

Evacuation Routes

100 Area (Container Storage)

If it becomes necessary to evacuate the 100 Area and adjoining structures, personnel will be directed south along the main NASA WSTF access road to State Highway 70.

200 and 800 Areas (Evaporation Tank Unit)

During any emergency situation, personnel in the 200 and 800 Areas will be restricted from any affected areas and will remain inside the 200 and 800 Area Buildings. All air handling systems may be turned off to prevent any gases from entering the building. If it becomes necessary to evacuate personnel from the buildings, personnel will be directed to leave any exits located up wind at points further from the effect area and at locations on opposite sides of the building. Depending on the location of the area affected, personnel will then be directed south on Apollo Boulevard to the 100 Area or north on Complex Road B to the 400 Area.

500 and 700 Areas (Waste Fuel Treatment Unit and Open Detonation respectively)

There is no planned evacuation plan for the 500 and 700 Areas since there are no adjacent buildings that house WSTF personnel and since personnel are not usually stationed at these hazardous waste units.

Record Keeping and Incident Reports (264.56(j))

Operating Record (264.56(j))

After any incident occurs which requires implementation of the Contingency Plan, the same information required in Incident Reports section, regarding that incident will also be entered into the NASA operating record.

Incident Reports (264.56(j))

If it is determined that the emergency situation poses a threat to human health or the environment, or that the spill is a reportable spill, the EPM will make the following notifications:

1. Immediate notification to the National Response Center (800) 424-8802;

2. Within 24 hours after any spill or release of hazardous waste, WSTF will notify the NMED Secretary or their designee. The report will include:

   a. Name and telephone number of reporter;

   b. Name address of facility;

   c. Time and type of incident (e.g., spill, fire);

   d. Name and quantity of materials involved, to the extent known;

   e. The extent of injuries, if any; and,

   f. The possible hazards to human health or the environment.

3. Within 15 days after any incident occurs, NASA will submit to the NMED Secretary a written report on the incident. The report will include:

   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 (e.g., fire, explosion);

   d. Name and quantity of materials) involved;

   e. The extent of injuries, if any;

   f. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

g. Estimated quantity and disposition of recovered material that resulted from the incident.

Compliance (264.54(j))

Operation will resume only after the EPM notifies the NMED Secretary that no wastes which are incompatible with the released material have been stored, treated or disposed of in the affected Area before clean-up has been completed and that all emergency equipment used in any emergency response activity has been decontaminated and is fit for its intended use.

Corrective Action (270.14(b)(7))

After a response to a release requiring implementation of the Emergency Procedures, the EPM will initiate a review process and develop a corrective action plan to prevent spill recurrence. The corrective action plan will be reviewed and approved by management and then incorporated into operating procedures.

PERMIT ATTACHMENT II-7
CLOSURE PLANS FOR PERMITTED UNITS

Introduction

Closure plans are described in this permit attachment for each of the permitted units. At the actual time of closure, individual plans will be modified as necessary to more completely address the requirements of HWMR-6 and any changes in environmental conditions as they may be affected by each of the units. Copies of these plans will be kept with the Environmental Program Manager (EPM).

Closure is expected for all units in the year 2025. NASA will notify the Secretary of the New Mexico Environment Department the required number of days prior to the expected date that closure activities are to begin for each unit. The required number of days for the Container Storage, the Evaporation Tank, and the Waste Fuel Treatment Units are 45 days (Figure II-7-1). That number for the Open Detonation Unit is 60 days (Figure II-7-2).

Certification of closure for all units will be performed by an independent registered professional engineer in accordance with HWMR-6, Part V, § 264.115. The NMED will be notified within 60 days of the final closure, that the then currently approved closure plan has been implemented and is approaching completion.

Container Storage Unit

An approximation of the maximum waste inventory managed over a 30 year period of continuous operation will be 2,500 short tons. This amount is based on Table A-1 in the January 1992 RCRA application Part A (Permit Attachment II-8). This figure is subject to modification, pending changes that could be made in subsequent Part A applications, and subject to approval for those changes by the Secretary of the NMED. See Permit Attachment III-2 for a complete listing, along with quantities, for each permitted waste.

The interior portion of the Container Storage Building will be decontaminated by triple rinsing all interior surfaces, and other equipment with high pressure hot water with a biodegradable detergent. All rinsate will be collected in containers. The entire decontamination process will be performed by facility certified Hazardous Waste Handlers. The third rinsate will be collected and analyzed in an effort to demonstrate "clean closure".

All closure related activity dates are outlined in Figures II-7-1 and II-7-2. These times are in compliance with HWMR-6, Part V, Subpart G.

Figure II-7-1 **Closure Schedule for the Container Storage, Evaporation Tank, and the Waste Fuel Treatment Units**

Day	0	45	90	150	180	240	330	360
Notification to close	*							
Final Receipt of HW at Unit		*						
Closure Begins		*						
All Stored/Treated HW Removed from Unit		*-90 days-*						
Disposal, Decontam. and Sampling starts		*------180 days-------*						
Certificate of Closure						*60 days*		

Evaporation Tank Unit

An approximation of the maximum waste inventory to be managed over the next 30 years of continuous operations will be 10 million gallons. The greater percentage of all waste is water. This amount is based on a maximum design capacity presented in the January 1992 RCRA application, Part A (Permit Attachment II-8). See Permit Attachment IV-2 for a complete listing, along with quantities, for each permitted waste.

All accumulated waste inventory, including sludge or dense phase residues, will be shipped to a RCRA approved off-site hazardous waste disposal facility.

After it is determined that all tanks and other ancillary components are free of leaks, they will be decontaminated at the closure site by triple rinsing with high pressure injected hot water and a biodegradable detergent. Used rinse water which is determined by chemical analysis to be hazardous will be removed in the same manner as other accumulated waste inventory. Once decontaminated, all components of the unit will be sealed, disconnected and disposed of in compliance with RCRA.

Waste Fuel Treatment Unit

An approximation of the maximum waste inventory to be managed over a 30 year period of continuous operations is 2.8 million gallons. Included in this quantity are hydrazine fuels and water. Smaller amounts of chlorine and sodium hydroxide will be included in the mixture. Water will account for 90 percent or more of the overall volume. Amounts are based on Table A-1 in the January 1992 RCRA application, Part A (Permit Attachment II-8). Permit Attachment IV-2 identifies maximum amounts of individual hydrazines that are permitted on an annual basis.

At closure, all accumulated waste fuel will be treated, transported and pumped into the Evaporation Tank Unit's evaporation tanks. Facility certified Waste Handlers will decontaminate the unit using high pressure injected hot water with a biodegradable detergent. Three separate rinses will be used on all surfaces of the unit's components and equipment used in conjunction with the hazardous waste management process. The third rinsate will be analyzed to determine if decontamination has been completed. If decontamination is complete, then all rinsate will be collected for disposal in the Evaporation Tank Unit; if not, then rinsing will continue until decontamination is complete. Any potentially contaminated tanks, process lines, or other materials that cannot be decontaminated at the unit site, will be characterized for disposal at an off-site RCRA permitted disposal facility.

Open Detonation Unit

An approximation of the maximum waste inventory to be managed over the next 30, year period of continuous operations is 10,500 pounds of type A,B and C waste explosives. This amount is based on Table A-1 in the January 1992 RCRA application, Part A (Permit Attachment II-8). Permit Attachment V-2 identifies maximum amounts of waste explosives that are permitted on an annual basis. The unit has been in operation since the early 1960's, and under interim status since 1988.

~~Recent annual~~Soil sampling of ~~the~~this unit ~~and background has not exceeded Toxic Characteristic Leaching Procedure limits~~ for organic explosive residues or associated heavy metals has been performed since December, 1989. ~~Future~~ Monitoring will be ~~conducted~~continued for total organic explosive residues and total ~~heavy~~ metals ~~associated with the permitted explosives~~until closure. Further discussion for sampling and analysis of the open Detonation Unit are in Permit Attachment V-4.

The actual closure of this unit is intended to be a "clean closure". Any residues remaining in the unit, that exceed ~~background~~ quantities allowed by this Permit, will be removed by excavation and disposed of in accordance with HWMR-6.

If it is determined that contamination cannot be removed from the soil, or soil and ground water, this plan will be amended to require closure of the unit as a landfill. The amended plan will be submitted to the NMED within 90 days of the determination.

All equipment used in the closure process will be decontaminated using high pressure injected hot water with a biodegradable detergent. The equipment will be triple rinsed and all rinsate will be collected for disposal in the Evaporation Tank Unit. The third rinsate will be analyzed to determine the completeness of the decontamination process. If the third rinsate continues to be classified as a hazardous waste, then the rinsing process will continue. Equipment that cannot be decontaminated will be packaged, transported and disposed of at an off-site RCRA permitted facility.

Figure II-7-2 Shows the time schedule for the Open Detonation Unit. Since the Open Detonation Unit possesses aspects of a land fill unit, the notification requirement and the time for the last receipt of hazardous waste varies from those for the container storage and tank storage and treatment units.

Figure II-7-2 **Closure Schedule for the Open Detonation Unit**

Day	0	30	60	90	150	180	240	330	360
Notification to close	*								
Final Receipt of HW at Unit		*							
Closure Begins			*						
All Stored/Treated HW Removed from Unit			* -90 days-*						
Disposal, Decontam. and Sampling starts			*-----180 days------*						
Certificate of Closure						*60 days*			

PERMIT ATTACHMENT II-8

HAZARDOUS WASTE PERMIT APPLICATION PART A

For EPA Regional Use Only		For State Use Only
Date Received Month Day Year		

EPA

United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. ID Number(s)

A. EPA ID Number	B. Secondary ID Number *(if applicable)*
NM8800019434	

II. Name of Facility

NASA JSC White Sands Test Fac

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street

14 MI E & 6 MI N of Las Cruces

Street *(continued)*

City or Town	State	ZIP Code
Las Cruces	NM	88004-

County Code *(if known)*	County Name
013	Dona Ana

B. Land Type *(enter code)*	C. Geographic Location		D. Facility Existence Date
	LATITUDE (degrees, minutes, & seconds)	*LONGITUDE (degrees, minutes, & seconds)*	Month Day Year
F	32 31 1 S N	106 35 41 W	07 07 1962

IV. Facility Mailing Address

Street or P.O. Box

PO Drawer MM

City or Town	State	ZIP Code
Las Cruces	NM	88004-

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(last)*	*(first)*
Amidei	David

Job Title	Phone Number *(area code and number)*
Env Manager	505-524-5517

VI. Facility Contact Address *(See instructions)*

A. Contact Address Location	A. Contact Address Mailing	B. Street or P.O. Box
	X	

City or Town	State	ZIP Code
		-

EPA I.D. Number *(enter from page 1)*: NM8800019434

Secondary ID Number *(enter from page 1)*:

VII. Operator Information *(see instructions)*

Name of Operator: NASA White Sands Test Fac

Street or P.O. Box: PO Drawer MM

City or Town: Las Cruces | State: NM | ZIP Code: 88004-

Phone Number *(area code and number)*: 505-524-5771

B. Operator Type: F

C. Change of Operator Indicator: Yes [ ] No [X]

Date Changed: Month | Day | Year

VIII. Facility Owner *(see instructions)*

A. Name of Facility's Legal Owner: White Sands Missile Range

Street or P.O. Box:

City or Town: WSMR | State: NM | ZIP Code: 88002-

Phone Number *(area code and number)*: 505-678-1101

B. Owner Type: F

C. Change of Owner Indicator: Yes [ ] No [X]

Date Changed: Month | Day | Year

IX. SIC Codes *(4-digit, in order of significance)*

Primary	Secondary
9661 *(description)* Space Research and Technology	*(description)*
Secondary	**Secondary**
(description)	*(description)*

X. Other Environmental Permits *(see instructions)*

A. Permit Type *(enter code)*	B. Permit Number	C. Description
	NA	

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XI. Nature of Business (provide a brief description)

White Sands Test Facility, an organizational element of Lyndon B. Johnson Space Center, Houston, Texas, started operation in June 1964 as a remote location for hazardous testing associated with the development of the Apollo Spacecraft Propulsion Systems. Presently, the site is engaged mainly in propulsion and material testing for the Space Transportation System.

XII. Process - Codes and Design Capacities

A. **PROCESS CODE** - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Twelve lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided in item XIII.*

B. **PROCESS DESIGN CAPACITY** - *For each code entered in column A, enter the capacity of the process.*

1. **AMOUNT** - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process unit.*
2. **UNIT OF MEASURE** - *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. **PROCESS TOTAL NUMBER OF UNITS** - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	DISPOSAL:	
D79	INJECTION WELL	GALLONS; LITERS; GALLONS PER DAY; OR LITERS PER DAY
D80	LANDFILL	ACRE-FEET OR HECTARE-METER
D81	LAND APPLICATION	ACRES OR HECTARES
D82	OCEAN DISPOSAL	GALLONS PER DAY OR LITERS PER DAY
D83	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	STORAGE:	
S01	CONTAINER (barrel, drum, etc.)	GALLONS OR LITERS
S02	TANK	GALLONS OR LITERS
S03	WASTE PILE	CUBIC YARDS OR CUBIC METERS
S04	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	TREATMENT:	
T01	TANK	GALLONS PER DAY OR LITERS PER DAY
T02	SURFACE IMPOUNDMENT	GALLONS PER DAY OR LITERS PER DAY
T03	INCINERATOR	SHORT TONS PER HOUR; METRIC TONS PER HOUR; GALLONS PER HOUR; LITERS PER HOUR; OR BTU'S PER HOUR
T04	OTHER TREATMENT (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundment or incinerators. Describe the processes in the space provided in item XIII.)	GALLONS PER DAY; LITERS PER DAY; POUNDS PER HOUR; SHORT TONS PER HOUR; KILOGRAMS PER HOUR; METRIC TONS PER DAY; METRIC TONS PER HOUR; OR SHORT TONS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
GALLONS PER HOUR	E
GALLONS PER DAY	U
LITERS	L
LITERS PER HOUR	H
LITERS PER DAY	V
SHORT TONS PER HOUR	D
METRIC TONS PER HOUR	W
SHORT TONS PER DAY	N
METRIC TONS PER DAY	S
POUNDS PER HOUR	J
KILOGRAMS PER HOUR	R
CUBIC YARDS	Y
CUBIC METERS	C
ACRES	B
ACRE-FEET	A
HECTARES	Q
HECTARE-METER	F
BTU's PER HOUR	K

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. UNIT OF MEASURE - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. **PROCESS CODES:**

   For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

   For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that processes that characteristic or toxic contaminant.

   NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

   1. *Enter the first two as described above.*
   2. *Enter "000" in the extreme right box of Item XIV-D(1).*
   3. *Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).*

2. **PROCESS DESCRIPTION:** *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

   NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

   1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
   2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.*
   3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESS (1) PROCESS CODES (enter)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X	1	K 0 5 4	900	P	T 0 3 D 8 0	
X	2	D 0 0 2	400	P	T 0 3 D 8 0	
X	3	D 0 0 1	100	P	T 0 3 D 8 0	
X	4	D 0 0 2				Included With Above

EPA Form 8700-23 (01-90)

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XII. Process – Codes and Design Capacities (continued)

EXAMPLE FOR COMPLETING ITEM XII (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

Line Number	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	FOR OFFICIAL USE ONLY
X 1	S 0 2	600	G	0 0 2	
X 2	T 0 3	20	E	0 0 1	
1	S 0 1	2,640	G	0 0 1	
2	T 0 1	660	U	0 0 1	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

NOTE: If you need to list more than 12 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for additional treatment processes in item XIII.

XIII. Additional Treatment Processes (follow instructions from item XII)

Line Number (enter numbers in sequence with item XII)	A. PROCESS CODE	B. TREATMENT PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. TREATMENT PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	D. DESCRIPTION OF PROCESS
3	T 0 4	100	U	0 0 1	Open Detonation of waste expolosives. The process is conducted in an open pit in the 700 Area. Actual operation is a batch process with the normal batch size less than 10 lbs. of explosives. Design capacity has been calculated on the assumption that 1 gallon of waste explosives weighs 12 pounds.
4	T 0 4	100	U	0 0 1	
	T 0 4				This is a Chlorination Facility that treats hydrazine contaminated wastes. This process utilizes chlorine gas and sodium hydroxide to degrade the fuel waste.
	T 0 4				

EPA Form 8700-23 (01-90)

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XIV. Description of Hazardous Wastes

A. **EPA HAZARDOUS WASTE NUMBER** - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. **ESTIMATED ANNUAL QUANTITY** - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. **UNIT OF MEASURE** - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that processes that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item XIV-D(1).*
3. *Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).*

2. **PROCESS DESCRIPTION:** *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESS	
				(1) PROCESS CODES (enter)	(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

Type or type with ELITE type (12 characters per inch) in the unshaded areas only

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D 0 0 1	24	T	S 0 1 T 0 1	
2	D 0 0 2	21	T	S 0 1 T 0 1	
3	D 0 0 3	900	P	S 0 1 T 0 1 T 0 4	(T04) OD Unit
4	D 0 0 4	85	P	S 0 1 T 0 1	
5	D 0 0 5	4	T	S 0 1 T 0 1	
6	D 0 0 6	1400	P	S 0 1 T 0 1	
7	D 0 0 7	3.2	T	S 0 1 T 0 1	
8	D 0 0 8	6	T	S 0 1 T 0 1	
9	D 0 0 9	1.2	T	S 0 1 T 0 1	
10	D 0 1 1	5	T	S 0 1 T 0 1	
11	D 0 1 8	10	T	S 0 1 T 0 1	
12	D 0 1 9	10	T	S 0 1 T 0 1	
13	D 0 3 5	10	T	S 0 1 T 0 1	
14	D 0 3 8	10	T	S 0 1 T 0 1	
15	D 0 4 0	10	T	S 0 1 T 0 1	
16	F 0 0 1	37	T	S 0 1 T 0 1	
17	F 0 0 2	6.5	T	S 0 1 T 0 1	
18	F 0 0 3	3	T	S 0 1 T 0 1	
19	F 0 0 4	6	T	S 0 1 T 0 1	
20	F 0 0 5	6	T	S 0 1 T 0 1	
21	F 0 0 6	85	P	S 0 1 T 0 1	
22	F 0 0 7	85	P	S 0 1 T 0 1	
23	F 0 0 8	85	P	S 0 1 T 0 1	
24	F 0 0 9	85	P	S 0 1 T 0 1	
25	P 0 6 8	106	T	S 0 1 T 0 1 T 0 4	(T04) Chlorination Facility
26	P 0 7 8	6	T	S 0 1 T 0 1	
27	P 0 8 2	150	P	S 0 1 T 0 1	
28	U 0 9 8	100	T	S 0 1 T 0 1	(T04) Chlorination Facility
29	U 0 9 9	100	T	S 0 1 T 0 1	(T04) Chlorination Facility
30	U 1 3 3	40	T	S 0 1 T 0 1	(T04) Chlorination Facility
31	F 0 1 0	10	P	S 0 1	Lines 31-326 are wastes ~~which are not normally~~ generated but could be ~~generated in small~~ quantities in the future.
32	F 0 1 1	10	P	S 0 1	
33	F 0 1 2	10	P	S 0 1	

EPA I.D. Number (enter from page 1): N M 8 8 0 0 0 1 9 4 3 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
34	D 0 1 0	10	P	S 0 1 T 0 1	
35	D 0 2 1	10	P	S 0 1	
36	D 0 2 2	10	P	S 0 1	
37	D 0 2 3	10	P	S 0 1 T 0 1	
38	D 0 2 4	10	P	S 0 1 T 0 1	
39	D 0 2 5	10	P	S 0 1 T 0 1	
40	D 0 2 6	10	P	S 0 1 T 0 1	
41	D 0 2 7	10	P	S 0 1	
42	D 0 2 8	10	P	S 0 1	
43	D 0 2 9	10	P	S 0 1	
44	D 0 3 0	10	P	S 0 1	
45	D 0 3 3	10	P	S 0 1	
46	D 0 3 4	10	P	S 0 1	
47	D 0 3 6	10	P	S 0 1	
48	D 0 3 7	10	P	S 0 1	
49	D 0 3 9	10	P	S 0 1	
50	D 0 4 3	10	P	S 0 1	
51	P 0 0 2	10	P	S 0 1	
52	P 0 0 3	10	P	S 0 1	
53	P 0 0 5	10	P	S 0 1 T 0 1	
54	P 0 0 6	10	P	S 0 1	
55	P 0 0 7	10	P	S 0 1	
56	P 0 0 8	10	P	S 0 1	
57	P 0 0 9	10	P	S 0 1 T 0 4	(T04) OD Unit
58	P 0 1 0	10	P	S 0 1	
59	P 0 1 1	10	P	S 0 1	
60	P 0 1 2	10	P	S 0 1	
61	P 0 1 3	10	P	S 0 1	
62	P 0 1 4	10	P	S 0 1	
63	P 0 1 5	10	P	S 0 1	
64	P 0 1 6	10	P	S 0 1	
65	P 0 1 7	10	P	S 0 1	
66	P 0 1 8	10	P	S 0 1	

GB

EPA I.D. Number (enter from page 1): NM880001943 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
67	P021	10	P	S01	
68	P022	10	P	S01	
69	P024	10	P	S01	
70	P026	10	P	S01	
71	P027	10	P	S01	
72	P028	10	P	S01	
73	P029	10	P	S01	
74	P030	10	P	S01	
75	P031	10	P	S01	
76	P033	10	P	S01	
77	P036	10	P	S01	
78	P038	10	P	S01	
79	P040	10	P	S01	
80	P041	10	P	S01	
81	P042	10	P	S01	
82	P046	10	P	S01	
83	P047	10	P	S01	
84	P048	10	P	S01	
85	P049	10	P	S01	
86	P054	10	P	S01	
87	P056	10	P	S01	
88	P057	10	P	S01	
89	P058	10	P	S01	
90	P063	10	P	S01	
91	P064	10	P	S01	
92	P065	10	P	S01	
93	P070	10	P	S01	
94	P073	10	P	S01	
95	P074	10	P	S01	
96	P075	10	P	S01	
97	P076	10	P	S01 T01	
98	P077	10	P	S01	
99	P081	10	P	S01 T04	(T04) OD Unit

EPA I.D. Number (enter from page 1): N M 8 8 0 0 0 1 9 4 3 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
100	P084	10	P	S01	
101	P087	10	P	S01	
102	P092	10	P	S01	
103	P093	10	P	S01	
104	P095	10	P	S01	
105	P098	10	P	S01	
106	P099	10	P	S01	
107	P101	10	P	S01	
108	P102	10	P	S01	
109	P103	10	P	S01	
110	P104	10	P	S01	
111	P105	10	P	S01	
112	P106	10	P	S01	
113	P107	10	P	S01	
114	P096	10	P	S01	
115	P110	10	P	S01	
116	P111	10	P	S01	
117	P112	10	P	S01 T04	(T04) OD Unit
118	P113	10	P	S01	
119	P114	10	P	S01	
120	P115	10	P	S01	
121	P116	10	P	S01 T01	
122	P118	10	P	S01	
123	P119	10	P	S01 T01	
124	P120	10	P	S01	
125	P121	10	P	S01	
126	P122	10	P	S01	
127	U034	10	P	S01	
128	U187	10	P	S01	
129	U020	10	P	S01 T01	
130	U080	10	P	S01	
131	U107	10	P	S01	
132	U117	10	P	S01	

Type or print using type the characters within the unshaded areas only

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1 33	U151	10	P	S01	
1 34	U005	10	P	S01	
1 35	U112	10	P	S01	
1 36	U144	10	P	S01	
1 37	U214	10	P	S01	
1 38	U232	10	P	S01	
1 39	U002	10	P	S01	
1 40	U003	10	P	S01	
1 41	U004	10	P	S01	
1 42	U006	10	P	S01	
1 43	U007	10	P	S01	
1 44	U008	10	P	S01	
1 45	U009	10	P	S01	
1 46	U012	10	P	S01	
1 47	U157	10	P	S01	
1 48	U016	10	P	S01	
1 49	U017	10	P	S01	
1 50	U192	10	P	S01	
1 51	U018	10	P	S01	
1 52	U094	10	P	S01	
1 53	U014	10	P	S01	
1 54	U049	10	P	S01	
1 55	U093	10	P	S01	
1 56	U328	10	P	S01	
1 57	U353	10	P	S01	
1 58	U158	10	P	S01	
1 59	U222	10	P	S01	
1 60	U181	10	P	S01	
1 61	U019	10	P	S01	
1 62	U038	10	P	S01	
1 63	U030	10	P	S01	
1 64	U035	10	P	S01	
1 65	U037	10	P	S01	

EPA I.D. Number (enter from page 1): NM880001943 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1 66	U221	10	P	S01	
1 67	U028	10	P	S01	
1 68	U069	10	P	S01	
1 69	U088	10	P	S01	
1 70	U102	10	P	S01	
1 71	U070	10	P	S01	
1 72	U071	10	P	S01	
1 73	U072	10	P	S01	
1 74	U060	10	P	S01	
1 75	U223	10	P	S01	
1 76	U239	10	P	S01	
1 77	U201	10	P	S01	
1 78	U127	10	P	S01	
1 79	U056	10	P	S01	
1 80	U220	10	P	S01	
1 81	U105	10	P	S01 T04	(T04) OD Unit
1 82	U106	10	P	S01 T04	(T04) OD Unit
1 83	U055	10	P	S01	
1 84	U169	10	P	S01	
1 85	U183	10	P	S01	
1 86	U185	10	P	S01	
1 87	U207	10	P	S01	
1 88	U061	10	P	S01	
1 89	U247	10	P	S01	
1 90	U023	10	P	S01	
1 91	U234	10	P	S01	
1 92	U021	10	P	S01	
1 93	U202	10	P	S01	
1 94	U203	10	P	S01	
1 95	U141	10	P	S01	
1 96	U090	10	P	S01	
1 97	U064	10	P	S01	
1 98	U022	10	P	S01	

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1 99	U197	10	P	S01	
2 00	U085	10	P	S01	
2 01	U073	10	P	S01	
2 02	U091	10	P	S01	
2 03	U095	10	P	S01	
2 04	U027	10	P	S01	
2 05	U024	10	P	S01	
2 06	U225	10	P	S01	
2 07	U128	10	P	S01	
2 08	U172	10	P	S01	
2 09	U031	10	P	S01	
2 10	U160	10	P	S01	
2 11	U053	10	P	S01	
2 12	U074	10	P	S01	
2 13	U143	10	P	S01	
2 14	U032	10	P	S01	
2 15	U238	10	P	S01	
2 16	U178	10	P	S01	
2 17	U097	10	P	S01	
2 18	U114	10	P	S01	
2 19	U062	10	P	S01	
2 20	U215	10	P	S01	T01
2 21	U033	10	P	S01	
2 22	U156	10	P	S01	
2 23	U211	10	P	S01	
2 24	U026	10	P	S01	
2 25	U039	10	P	S01	
2 26	U041	10	P	S01	
2 27	U042	10	P	S01	
2 28	U046	10	P	S01	
2 29	U047	10	P	S01	
2 30	U048	10	P	S01	
2 31	U050	10	P	S01	

EPA I.D. Number (enter from page 1): NM880001943 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
232	U051	10	P	S01	
233	U052	10	P	S01	
234	U246	10	P	S01	
235	U057	10	P	S01	
236	U130	10	P	S01	
237	U063	10	P	S01	
238	U075	10	P	S01	
239	U078	10	P	S01	
240	U079	10	P	S01	
241	U025	10	P	S01	
242	U081	10	P	S01	
243	U082	10	P	S01	
244	U083	10	P	S01	
245	U084	10	P	S01	
246	U108	10	P	S01	
247	U086	10	P	T04 S01	(T04) Chlorination Facility
248	U092	10	P	S01	
249	U096	10	P	S01	
250	U101	10	P	S01	
251	U103	10	P	S01	
252	U109	10	P	T04 S01	(T04) Chlorination Facility
253	U110	10	P	S01	
254	U111	10	P	S01	
255	U174	10	P	S01	
256	U155	10	P	S01	
257	U067	10	P	S01	
258	U076	10	P	S01	
259	U077	10	P	S01	
260	U131	10	P	S01	
261	U184	10	P	S01	
262	U208	10	P	S01	
263	U209	10	P	S01	
264	U218	10	P	S01	

EPA I.D. Number (enter from page 1): NM880001943 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
265	U227	10	P	S01	
266	U359	10	P	S01	
267	U173	10	P	S01	
268	U043	10	P	S01	
269	U210	10	P	S01	
270	U228	10	P	S01	
271	U113	10	P	S01	
272	U115	10	P	S01	
273	U116	10	P	S01	
274	U118	10	P	S01	
275	U119	10	P	S01	
276	U120	10	P	S01	
277	U122	10	P	S01	
278	U123	10	P	S01	
279	U125	10	P	S01	
280	U147	10	P	S01	
281	U213	10	P	S01	
282	U126	10	P	S01	
283	U243	10	P	S01	
284	U134	10	P	S01	
285	U135	10	P	S01	
286	U096	10	P	S01	
287	U136	10	P	S01	
288	U137	10	P	S01	
289	U139	10	P	S01	
290	U190	10	P	S01	
291	U140	10	P	S01	
292	U145	10	P	S01	
293	U146	10	P	S01	
294	U149	10	P	S01	
295	U152	10	P	S01	
296	U045	10	P	S01	
297	U138	10	P	S01	

EPA I.D. Number (enter from page 1): N M 8 8 0 0 0 1 9 4 3 4

Secondary ID Number (enter from page 1):

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
2 98	U153	10	P	S01	
2 99	U121	10	P	S01	
3 00	U154	10	P	S01	
3 01	U186	10	P	S01	
3 02	U068	10	P	S01	
3 03	U159	10	P	S01	
3 04	U161	10	P	S01	
3 05	U162	10	P	S01	
3 06	U164	10	P	S01	
3 07	U165	10	P	S01	
3 08	U170	10	P	S01	
3 09	U171	10	P	S01	
3 10	U193	10	P	S01	
3 11	U182	10	P	S01	
12	U188	10	P	S01	
3 13	U189	10	P	S01	
3 14	U191	10	P	S01	
3 15	U179	10	P	S01	
3 16	U194	10	P	S01	
3 17	U066	10	P	S01	
3 18	U235	10	P	S01	
3 19	U196	10	P	S01	
3 20	U204	10	P	S01	
3 21	U216	10	P	S01	
3 22	U217	10	P	S01	
3 23	U219	10	P	S01	
3 24	U244	10	P	S01	
3 25	U226	10	P	S01	
3 26	U044	10	P	S01	

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
N M 8 8 0 0 0 1 9 4 3 4	

XIV. Description of Hazardous Waste (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 6.

Line Number	Additional Process Codes (enter)

XV. Map

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature	Date Signed
	11 Oct 95

Name and Official Title (type or print)

Brigadier General Jerry L. Laws, Commanding General, White Sands Missile Range

Owner/Operator Signature	Date Signed
	9-5-95

Name and Official Title (type or print)

for Grady E. McCright, Manager, White Sands Test Facility

XIX. Comments

Facility Owner: NASA White Sands Test Facility, P.O. Drawer MM, Las Cruces, NM 88004,

Phone Number: 505-524-5771

Effective June 2, 1995, NASA and WSMR became co-owners of the facility.

Note: Mail completed form to the appropriate EPA Regional or State Office. (refer to instructions for more information)

TABLE A-1
ESTIMATED ANNUAL WASTE DISTRIBUTION

WASTE CODE	ESTIMATED ANNUAL AMOUNT	EVAPORATION TANKS (T01)	DRUM STORAGE FACILITY (S01)	CHLORINATION FACILITY (T04)	OPEN DETONATION (T04)
D001	24(T)	20(T)	4(T)	N/A	N/A
D002	21(T)	18(T)	3(T)	N/A	N/A
D003	900(P)	50(P)	500(P)	N/A	350(P)
D004	85(P)	75(P)	10(P)	N/A	N/A
D005	4(T)	2(T)	2(T)	N/A	N/A
D006	1400(P)	400(P)	1000(P)	N/A	N/A
D007	3.2(T)	0.2(T)	3(T)	N/A	N/A
D008	6(T)	N/A	2.5(T)	N/A	N/A
D009	1(T)	N/A	1(T)	N/A	N/A
D011	5(T)	4(T)	150(P)	N/A	N/A
D018	10(T)	10(T)	10(T)	N/A	N/A
D019	10(T)	10(T)	10(T)	N/A	N/A
D035	10(T)	10(T)	10(T)	N/A	N/A
D038	10(T)	10(T)	10(T)	N/A	N/A
D040	10(T)	10(T)	10(T)	N/A	N/A
F001	37(T)	30(T)	7(T)	N/A	N/A
F002	6.5(T)	6(T)	6.5(T)	N/A	N/A
F003	3(T)	1(T)	2(T)	N/A	N/A
F004	6(T)	4(T)	2(T)	N/A	N/A
F005	6(T)	4(T)	2(T)	N/A	N/A
F006	25(P)	75(P)	10(P)	N/A	N/A
F007	85(P)	75(P)	10(P)	N/A	N/A
F008	85(P)	75(P)	10(P)	N/A	N/A
F009	85(P)	75(P)	10(P)	N/A	N/A
P068	106(T)	106(T)	500(P)	106(T)	N/A
P078	6(T)	6(T)	500(P)	N/A	N/A
P082	150(P)	N/A	150(P)	N/A	N/A
U098	100(T)	100(T)	500(P)	100(T)	N/A
U099	100(T)	100(T)	500(P)	100(T)	N/A
U133	40(T)	40(T)	500(P)	40(T)	N/A

(P) = Pounds per year
(t) = Tons per year

TABLE A-2

HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
10-07-03	WASTE PLATE DEVELOPER	D002	50 GALLONS
10-08-01	WASTE PHOTO SOLUTION	D011	120 GALLONS
10-08-02	AMMONIUM HYDROXIDE	D002	13 GALLONS
~~20-01-05~~	~~SPENT ISOPROPYL ALCOHOL~~	~~D001~~	~~4500 GALLONS~~
20-01-11	SPENT OAKITE HD128 SOLUTION	D002	2008 GALLONS
20-01-13	SPENT OAKITE RUSTRIPP	D002	1000 GALLONS
20-01-14	SPENT PICKLING SOLUTION	3002	500 GALLONS
~~20-01-19~~	~~FREON EXTRACTION UNIT~~	~~F001~~	~~2000 GALLONS~~
~~20-01-27~~	~~VAPOR DRYER EFFLUENT~~	~~F001~~	~~3000 GALLONS~~
20-02-14	SPENT X-RAY FIXER SOLUTION	D011	124 GALLONS
~~20-03-02~~	~~SPENT EP-2 BLEACH-FIX~~	~~D011~~	~~475 GALLONS~~
~~20-03-07~~	~~E-6 FIXER~~	~~D011~~	~~45 GALLONS~~
20-03-12	C-41 FIXER	D011	80 GALLONS
20-03-15	B&W FIXER	D011	45 GALLONS
20-03-17	SPENT BLEACH-FIX R-3	D011	25 GALLONS
~~20-03-25~~	~~CHROME SX BLEACH FIX~~	~~D011~~	~~5 GALLONS~~
~~20-03-28~~	~~RA-4 BLEACH FIX~~	~~D011~~	~~300 GALLONS~~
~~20-03-31~~	~~WASTE F-4 FIXER~~	~~D011~~	~~50 GALLONS~~
20-04-01	AQUEOUS LAB WASTES	F002, F003, etc.	1000 GALLONS
~~20-04-03~~	~~WASTE FUEL~~	~~P068, U133, U099~~	~~130 GALLONS~~
~~20-05-04~~	~~SPENT APMC SOLUTION~~	~~D001~~	~~120 GALLONS~~
20-05-06	SPENT TINPOSIT SOLUTION	D002	12 GALLONS
30-01-01	WATER CONTAMINATED W/FUEL	P058	100 GALLONS
30-01-02	WATER CONTAMINATED W/OX	P078	100 GALLONS
30-01-03	FUEL ASPIRATOR WATER	P068	200 GALLONS
30-01-04	OX ASPIRATOR WATER	P078	200 GALLONS
~~30-01-25~~	~~USED ISOPROPYL ALCOHOL~~	~~D001~~	~~350 GALLONS~~
35-01-01	DECON WATER W/FUEL	P068	100 GALLONS
35-01-02	DECON WATER W/OX	P078	100 GALLONS
~~35-01-07~~	~~FUEL FLOW TEST WATER~~	~~P068~~	~~4000 GALLONS~~
~~35-01-14~~	~~SCRUBBER WATER CONT. W/FUEL~~	~~P068~~	~~18 GALLONS~~
40-01-01	WATER CONTAMINATED W/FUEL	P068	15000 GALLONS

TABLE A-2

HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
40-01-02	WATER CONTAMINATED W/OX	P078	100 GALLONS
40-01-03	FUEL ASPIRATOR WATER	P068	500 GALLONS
40-01-04	OX ASPIRATOR WATER	P078	500 GALLONS
~~40-01-19~~	~~WASTE IPA AND WATER~~	~~D001~~	~~500 GALLONS~~
~~40-01-44~~	~~WASTE FREON IN WATER~~	~~F002~~	~~300 GALLONS~~
40-02-07	ELECTROLYTE FOR BATTERIES	D002	30 GALLONS
~~40-02-08~~	~~USED ISOPROPYL ALCOHOL~~	~~D001~~	~~500 GALLONS~~
60-01-01	DECON WASTE WATER	F001	100 GALLONS
~~80-02-04~~	~~WASTE FUEL (IMMERSION)~~	~~U133, P068~~	~~30 GALLONS~~
~~80-02-23~~	~~WASTE FUEL (HOKE BOTTLE)~~	~~P068, U133~~	~~30 GALLONS~~
~~80-04-01~~	~~IGNITER WASTE~~	~~D001~~	25 GALLONS
~~30-02-01~~	~~HYDRAZINE CONT. DECON WATER~~	~~U133~~	~~100 GALLONS~~
~~30-01-33~~	~~TREATED VENT TANK RESIDUE~~	~~P068, U133, U099~~	~~4000 GALLONS~~
~~40-01-47~~	~~TREATED VENT TANK RESIDUE~~	~~P068, U133, U099~~	~~4000 GALLONS~~

TABLE A-3
HAZARDOUS WASTE TO CSU

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
10-01-10	WASTE SEPARATOR OIL	F001, F005, D007, D008	200 GALLONS
10-01-11	OILY SLUDGE	F001, F005, D007, D009	390 GALLONS
10-02-02	MAC SHOP OIL	F001, F005	220 GALLONS
10-03-01	PAINT WASTE	F001, D001, D009	250 GALLONS
10-04-05	WASTE MERCURY SWITCHES	D009	45 POUNDS
10-06-06	WASTE REFRIGERATION OIL	F001	100 GALLONS
10-10-04	OILY SLUDGE	F001, F005, D007, D008	55 GALLONS
~~20-01-07~~	~~SPENT METHYL ETHYL KETONE (MEK)~~	~~F005~~	~~55 GALLONS~~
20-01-08	WASTE CHROMATES	D006, D007	175 GALLONS
20-01-21	FREON STILL BOTTOMS	F001	50 GALLONS
20-01-25	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
~~20-01-30~~	~~VISSTRIP SOLID WASTE~~	~~F001, F003~~	~~50 GALLONS~~
20-01-33	~~FREON CONT. SOFT GOODS~~ CONTAMINATED DEBRIS	F001	30 LBS
20-02-15	SPENT CHROMIUM PLATING SOLUTION	D007	2 GALLONS
20-04-04	SPENT ORGANIC SOLVENTS	MULTIPLE CODES	150 GALLONS
~~20-04-07~~	~~SPENT CHROMIC ACID~~	~~D007~~	~~25 GALLONS~~
20-04-11	SPENT NI-CAD BATTERIES	D006, U133, U099	350 POUNDS
20-04-15	MERCURY CONTAMINATED MATERIALS	D009	45 POUNDS
~~20-04-16~~	~~OX CONTAMINATED SOFT GOODS~~	~~N/A~~	~~50 POUNDS~~
20-04-18	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
20-07-04	WASTE HALOCARBON CONT. OIL	F001	60 GALLONS
20-07-06	FREON CONTAMINATED SOFT GOODS	F001	90 POUNDS
~~20-08-01~~	~~SPENT METHYL ETHYL KETONE MEK~~	~~F005~~	~~10 GALLONS~~
20-09-02	LITHIUM BATTERIES	D003	1 POUND
20-13-07	SPENT NI-CAD BATTERIES	D006	350 POUNDS
~~25-02-01~~	~~SOLVENT CONTAMINATED SOFT GOODS~~	~~MULTIPLE CODES~~	~~10 POUNDS~~
27-01-07	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
27-01-10	~~FOIL PREP. MATERIALS~~ CONTAMINATED DEBRIS	F003	0.25 GALLONS
30-01-07	CONTAMINATED WASTE OIL	F001	20 GALLONS
30-01-08	~~FUEL~~ CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS

TABLE A-3
HAZARDOUS WASTE TO CSU

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
~~30-01-36~~	~~MERCURY BATTERIES~~	~~D009~~	~~1 POUND~~
~~30-01-24~~	~~MERCURY CONTAMINATED MATERIALS~~	~~D009~~	~~45 POUNDS~~
~~40-01-07~~ ~~40-02-15~~	CONTAMINATED WASTE OIL	F001	~~100~~ GALLONS ~~200~~
40-01-08	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
40-01-20	SPENT NI-CAD BATTERIES	D006	350 POUNDS
~~30-01-06~~	~~CONTAMINATED DEBRIS~~	~~MULTIPLE CODES~~	~~50 POUNDS~~
~~40-01-07~~	~~CONTAMINATED DEBRIS~~	~~MULTIPLE CODES~~	~~50 POUNDS~~
~~40-02-07~~	~~CONTAMINATED DEBRIS~~	~~MULTIPLE CODES~~	~~50 POUNDS~~
~~30-02-01~~	~~HYDRAZINE CONTAMINATED DECON WATER~~	~~U133~~	~~100 GALLONS~~
~~30-02-06~~	~~CONTAMINATED WASTE OIL~~	~~F001~~	~~150 GALLONS~~
~~30-01-29~~	~~WASTE TONER PREMIX~~	~~D001~~	~~2 GALLONS~~
~~40-01-42~~	~~WASTE TONER PREMIX~~	~~D001~~	~~2 GALLONS~~
~~30-02-18~~	~~SPENT ORGANIC SOLVENTS~~	~~D001~~	~~2 GALLONS~~
~~40-01-46~~	~~MERCURY BATTERIES~~	~~D009~~	~~1 POUND~~
~~40-01-24~~	~~MERCURY CONTAMINATED MATERIALS~~	~~D009~~	~~45 POUNDS~~
40-01-42	WASTE ACETONE	D001	2 GALLONS
40-02-01	WASTE ACETONE	D001	0.1 GALLONS
40-02-15	CONTAMINATED WASTE OIL	F001	100 GALLONS
80-01-05	MERCURY CONTAMINATED MATERIALS	D009	45 POUNDS
80-01-06	SOLVENT CONTAMINATED SOFT GOODS	SEE FILE	5 POUNDS
80-01-07	WASTE HALOCARBON OIL	F001	0.7 POUNDS
80-02-09	FUEL CONTAMINATED SOFT GOODS	P068	150 POUNDS
80-02-25	CONTAMINATED VACUUM OIL	F001	2 GALLONS
80-04-03	WASTE ORGANIC SOLVENTS	F003	1 GALLON

TABLE A-4
WIWPS NUMBER ASSOCIATED WITH EPA WASSTE CODES FOR HAZARDOUS WASTE GENERATED IN
QUANTITIES GREATER THAN 10 GALLONS/YEAR

D001	D002	D003	D004
10-03-01	10-07-03	70-01-01	NONE
20-01-05	10-08-02		
20-05-04	20-01-11		
30-01-25	20-01-14		
40-01-19	20-01-31		
40-02-08	20-05-06		
80-04-01	20-13-07		
	40-02-07		

D006	D007	D008	D009
20-04-11	10-01-11	10-01-06	10-03-01
20-13-07	10-03-01	10-01-11	
30-01-20	10-10-04	10-03-01	
40-01-20	20-01-08	10-04-01	
	20-01-32	10-10-04	
		30-01-19	
		20-02-06	
		90-01-05	

D011	F001	F002	F003
10-08-01	10-01-11	10-01-08	20-01-17
20-02-14	10-02-02	20-04-01	20-01-30
20-03-02	10-10-04	40-01-44	20-04-01
20-03-07	20-01-17		
20-03-12	20-01-19		
20-03-15	20-01-21		
20-03-17	20-01-27		
20-03-25	20-01-30		
	20-04-01		
	20-07-04		
	20-07-06		
	40-01-07		
	40-02-15		
	60-01-01		

TABLE A-4 (Con't.)

F004	F005	F006	F007
10-01-08	10-01-11	NONE	NONE
20-04-01	10-02-02		
	10-10-04		
	20-01-07		
	20-04-01		

F008	P068	P078	U099
NONE	20-04-03	30-01-02	20-04-03
	20-04-18	30-01-04	20-04-18
	20-20-01	35-01-02	27-01-07
	27-01-07	40-01-02	35-01-03
	30-01-01	40-01-04	80-02-09
	30-01-03	40-02-15	
	30-01-22		
	35-01-01		
	35-01-03		
	40-01-01		
	40-01-03		
	40-01-22		
	40-02-15		
	80-02-04		
	80-02-09		
	80-02-23		

U133
20-04-03
20-04-18
20-20-01
27-01-07
35-01-03
80-02-04
80-02-09
80-02-23

TABLE A-5
CHEMICAL DESCRIPTION OF
HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS#	CHEMICAL DESCRIPTION
10-07-03	WATER, >60%; SODIUM SULFITE, <4%; POTASSIUM HYDROXIDE, <3%; N-AMINO ETHYLETHANOLAMINE, <3%; SODIUM HYDROXIDE, <3%.
10-08-01	WATER, 70-85%; SODIUM HYDROXIDE, 1-5%; POTASSIUM BROMIDE, 1-5%, HYDROXQUINONE, 1-5%; 1-PHENYL-3-PYRAZOLINONE, <1%; SODIUM SULFITE, 1-5%; BENZOTRIAZOLE, <1%; EDTA-TERA SODIUM SALT, <2%; SILVER, <50 ppm; SODIUM THIOSULFATE, <20%; POTASSIUM IODINE, <1%.
10-08-02	WATER, 75%; AMMONIUM HYDROXIDE, <25%.
~~20-01-05~~	~~WATER, 80%; 2-PROPANOL, <20%.~~
20-01-11	WATER, 60%; SODIUM HYDROXIDE, <40%; SODIUM CARBONATE, <25%; SODIUM METASILICATE, <5%; SODIUM PYROPHOSPHATE, <2%.
20-01-13	WATER, 85%; SODIUM HYDROXIDE, <15%; SODIUM CARBONATE, <%.
20-01-14	WATER, 80%; HYDROFLOURIC ACID, 15%; NITRIC ACID, 5%.
~~20-01-19~~	~~WATER, >99%; FREON, <200 ppm.~~
~~20-01-27~~	~~WATER, >99%; FREON, <100 ppm.~~
20-02-14	WATER, 70-85%; SODIUM SULFITE, <25%; SODIUIM CARBONATE, <15%; HYDROQUINONE, <3%; P-METHYLAMINAPHENOL SULFATE, <2%; SODIUM BROMIDE, <5%; SODIUM METABISULFITE, <15%; POTASSIUM SULFITE, <15%; POTASSIUM HYDROXIDE, <1%; ACETIC ACID, <50%; 1-PHENYL-3-PHARAZOLIDINONE, <2%; GLUTARALDEHYDE, <10%; GLUTARALDEYDE BISULFITE, <5%; PROPYLENE GLYCOL <10%; P-TERIARY-OCTYLOPHENOXY POLYETHYL ALCOHOL, <1%; SILVER, <50 ppm.
~~20-03-02~~	~~WATER, 90%; AMMONIUM THIOSULFATTE, <10%; SODIUM BISULFITE, <1%; AMMONIUM FERRATE, <10%; AMMONIA, <1%; SILVER, <10 ppm.~~
~~20-03-07~~	~~WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.~~
20-03-12	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.
~~20-03-25~~	~~WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.~~
~~20-03-28~~	~~WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.~~
~~20-03-31~~	~~WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.~~
20-03-15	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM ACETATE, <1%; BORIC ACID, <1%.
20-03-17	WATER, 95%; SODIUM BROMIDE, <5%; AMMONIA, <1%; AMMONIUM THIOSULFATE, <5%; SODIUM BISULFATE, <1%.
20-04-01	WATER, 99%; TRACES OF HALOGENATED AND NON-HALOGENATED SOLVENTS, ACIDS, BASES, AND SOLUBLE SALTS.
20-04-03	WATER, 70-99%; HYDRAZINE, <30%; DIMETHYL HYDRAZINE, <30%; METHYL HYDRAZINE, <30%.
20-05-04	WATER, 75%; AMMONIUM PERSULPHATE, <25%; MERCURIC CHLORIDE, <1%.
20-05-08	WATER, 99%; TIN, <1%; THIOUREA, <1%; HYDROCHLORIC ACID, <1%.
30-01-01	WATER, 99-100%; METHYL HYDRAZINE, 0-330 ppm.
30-01-04	WATER, 90-100%; NITRIC ACID, 0-10%.
~~30-01-25~~	~~WATER, <10%; 2-PROPANOL, 90-100%; METHYL HYDRAZINE, 0-100 ppm.~~
~~30-02-01~~	~~WATER 89-100% HYDRAZINE, 0-330 ppm~~
35-01-01	WATER, 89-100%; METHYL HYDRAZINE, 0-330 ppm.
35-01-02	WATER, 90-100%; NITRIC ACID, 0-10%.

TABLE A-5
CHEMICAL DESCRIPTION OF
HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS#	CHEMICAL DESCRIPTION
40-01-01	WATER, 99-100%; METHYL MYDRAZINE, 0-330 ppm.
40-01-02	WATER, 99-100%; NITRIC ACID, 0-10%.
40-01-03	WATER, 99-100%; METHYL HYDRAZINE, 0-330 ppm.
40-01-04	WATER, 90-100%; NITRIC ACID, 0-10%.
40-01-04	WATER, 90-100%; NITRIC ACID, 0-10%.
~~40-01-19~~	~~WATER, <10%; 2-PROPANOL, 90-100%; METHYL HYDRAZINE, 0-100 ppm.~~
40-01-44	WATER, 99%; FREON, <200 ppm.
40-02-07	WATER, 50%; SULFURIC ACID, 10%; LEAD, <100 ppm.
~~40-02-08~~	~~WATER, <10%; 2-PROPANOL, 90-100%; METHYL HYDRAZINE, 0-100 ppm.~~
60-01-01	WATER, 100%; NO CONTAMINATION DETECTED.
~~80-02-04~~	~~WATER, 80-100%; METHYL HYDRAZINE, 0-10%; HYDRAZINE, 0-10%.~~
~~80-02-23~~	~~WATER, 80-100%; METHYL HYDRAZINE, 0-10%; HYDRAZINE, 0-10%.~~
~~80-04-01~~	~~WATER, >50%; HEXAMETHYLENE TETRAMINE, <20%.~~

MODULE III - CONTAINER STORAGE UNIT

III.A. MODULE HIGHLIGHTS

III.A.1. This Permit Authorizes storage of hazardous waste in containers in the 100 Area, Container Storage Unit. The unit is located at the NASA White Sands Test Facility, approximately 20 miles northeast of the city of Las Cruces. The Container Storage Unit is housed in Building 161. Waste managed at the unit is produced during research and development operations at the facility. The entire operational portion of the unit is equipped with secondary containment.

III.A.2. Detailed information about the unit's operation and design are provided in Permit Attachment III-1.

III.B. PERMITTED AND PROHIBITED WASTE

III.B.1. The Permittee may store in the Container Storage Unit only the hazardous wastes listed in Permit Attachment III-2 (summary of Part A of the Permit application), subject to the terms of this Permit.

III.B.2. The Permittee shall apply for and receive a Permit Modification prior to storing additional types of hazardous waste not identified by US EPA waste code number in Permit Attachment III-2.

III.B.3. When the amount of any waste handled in a calendar year exceeds the amount listed for the corresponding waste code in Permit Attachment III-2, the Permittee shall submit a report explaining the situation to the NMED. If the increase in annual quantities is expected to be repeated, the Permittee shall submit a revised Part A form by March 1 of the following year. New quantities listed in the revised Part A will be used to prepare a new Permit Attachment II-2, which will then become a part of this Permit. If management practices specified in Permit Attachment II-1 through II-6 and Permit Attachment III-I change as result of increase in the new annual quantities, the Permittee shall request a Permit Modification identifying the changes.

III.B.4. The Permittee shall comply with the following conditions (Permit Conditions III.B.4.a. through c) regarding storage of waste identified in HWMR-6, Part VIII, §§ 268.10, 268.11, and 268.12 as being subject to land disposal restrictions on land disposal in accordance with HWMR-6, Part VIII, Subpart C. The same

conditions shall be imposed on storage of any wastes that may become prohibited or restricted from land disposal by the New Mexico Hazardous Waste Management Regulations during the life of the Permit.

III.B.4.a. Waste shall be stored for no longer than one year from the date of its first receipt by the Permittee, unless the Permittee furnishes proof to the Secretary that such storage for periods in excess of one year is solely for the accumulation of such quantities as are necessary to facilitate proper recovery, treatment, or disposal.

III.B.4.b. Each container shall be clearly marked as to its contents and the date each period of accumulation begins.

III.B.4.c. Hazardous wastes meeting the treatment standards in HWMR-6, Part VIII, §§ 268.41, 268.42, and 268.43 are not subject to the storage prohibition in Permit Condition III.B.4.a. above.

III.C. CONTAINER REQUIREMENTS

The Permittee shall store waste in containers equivalent to the containers specified for each waste by DOT in 49 CFR 173. These containers will meet or exceed the requirements for strength and integrity specified by DOT in 49 CFR 178 for each class of container. Any container that must be overpacked due to a breach in its integrity shall be labeled accordingly.

III.D. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g. severe rusting, or apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit and as required by HWMR-6. Part V, § 264.171.

III.E. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall assure that the ability of the container to contain the waste is not impaired by any incompatibility with its contents, as required by HWMR-6, Part V, § 264.172.

III.F. MANAGEMENT OF CONTAINERS

III.F.1. The Permittee shall keep all containers closed during storage, except when it is necessary to add or remove waste, and shall not open, handle or store containers in a manner

which may rupture the container or cause it to leak (HWMR-6, Part V, § 264.173.

III.F.2. The Permittee shall not stack containers on top of one another in accordance with Permit Attachment III-1.

III.F.3. Containers holding liquids shall be ~~storesstored~~ on secondary containment pallets as specified in Permit Attachment III-1.

III.G. CONTAINMENT SYSTEM

The Permittee shall construct and maintain the containment system in a leak proof and fully operable condition in accordance with plans and specifications, contained in Permit Attachment III-I and as required by HWMR-6, Part V, § 264.175.

III.H. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the container storage area weekly to detect leaking containers and deterioration of containers, containment pallets and the building containment system, caused by corrosion or other factors, in accordance with HWMR-6, Part V, § 264.174 and Permit Conditions II.F.I. and II.F.2.

III.I RECORD KEEPING

The Permittee shall place the results of all waste analyses and trial tests in the facility operating record as stipulated by HWMR-6, Part V, § 264.73(b)(3).

III.J. CLOSURE

At closure of the Container Storage Unit, the Permittee shall remove all hazardous wastes and hazardous waste residues from the containment system in accordance with procedures in Permit Attachment II-7 (Closure Plan) and as required by HWMR-6, Part V, § 264.178.

III.K. SPECIAL CONTAINER PROVISIONS FOR IGNITABLE OR REACTIVE WASTE

III.K.1. The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line (HWMR-6, Part V, § 264.176).

III.K.2. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Permit Attachment II-5 (HWMR-6, Part V, §§ 264.17(a) and 264.176.

III.K.3. Motorized equipment shall not be allowed in the storage area for the purpose of moving containers in accordance with Permit Attachment III-I and Permit Condition III.K.2.

III.L. SPECIAL CONTAINER PROVISIONS FOR INCOMPATIBLE WASTE

III.L.1. The Permittee shall not place incompatible wastes, or incompatible waste and materials, in the same container (HWMR-6, Part V, § 264.77(a)).

III.L.2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material (HWMR-6, Part V, § 264.177(b)).

III.L.3 The Permittee shall separate containers of incompatible wastes in accordance with Permit Attachment II-5 and as required by HWMR-6, Part V, § 264.177(c).

PERMIT ATTACHMENT III-1
DESIGN OF THE CONTAINER STORAGE UNIT

Introduction

This narrative is ~~intent~~intended to describe the use and design of the 100 Area Container Storage Unit at the WSTF. The unit consists of one warehouse building that will receive and house RCRA hazardous waste as well as other wastes generated from various areas of the Facility. Storage of containerized waste at the unit will vary from none to a maximum capacity of 48, 55-gallon drums, or that equivalent in volume using other types of containers. The number of containers in storage at anyone time will be dependent upon the quantities of waste packaged and stored at the WSTF during a given time span and the time required to arrange for off-site disposal at an approved RCRA location.

An engineering and environmental assessment was conducted by an independent registered professional engineer who certifies that the unit is properly designed so that it will be compatible with the wastes intended for storage as specified in HWMR-6, Part V, § 264, Subpart I.

Use and Description of the Container Storage Unit

The Container Storage Unit is housed by Building 161, located in the 100 Area, approximately 500 feet northeast of Building 151. The unit will receive wastes from all areas of WSTF. Examples of wastes to be stored are spent solvents, soft goods contaminated with listed wastes, vacuum pump oil contaminated with hazardous constituents, waste paints, TSCA and non-hazardous waste. Organization of where each waste will be stored is indicated on Figure III-1-1. Waste drums containing liquids will be supported off the floor on secondary containment pallets shown in Figure III-1-2. They will normally contain any leaks that may occur, as well as prevent waste from draining onto the floor. Containers holding waste which is in a solid state may be stored directly on the floor of the building in wooden, plastic or metal boxes. At no time will containers be stacked on top of one another for the purpose of storage. Adequate aisle space will be maintained to allow an inspector access to all sides of each pallet and solid state waste containers. Also, proper spacing will insure that each container can be safely accessed by a portable drum handler or other manual lifting equipment for removal from the building. Drums of incompatible waste will be separated by placing the containers on separate pallets and placing the pallets in separate areas of the building. Flammable and combustible wastes will be stored away from doors when possible.

In addition to drums and other containers that will be used during storage, there will be various items placed in the building necessary for routine operations. There will be a desk

for completing manifests and other paper work, and for the storage of labels, records and hand tools. Other items include empty containers, pallets, container handling equipment, tools, waste transfer equipment, and a scale.

Access to the unit is gained through an overhead coiling door and through either of 2 locked metal doors. The overhead door, used for accessing containers, is 20 feet in height and 12 feet in width. The 2 metal doors used for personnel access, have dimensions of 3 feet in width and 7 feet in height.

Building 161 is pre-engineered, made of steel with rigid framing, and was manufactured by A and M Building Systems, Inc. of Clovis, New Mexico. The dimensions of the building are 30 feet in width, 40 feet in length, and 12 feet in height at the eaves. A purlin and girt framing system allows the attachment of 26 gauge steel roof and wall panels that are finished with a 1 mil polyester seal coating. The building is thermally protected by a 2 inch, vinyl backed, R-6 rated layer of insulation and two 24 inch, 3,000 cfm gravity flow roof ventilation turbines. Design specifications are based on the Metal Building Manufactures Association Code of Standard Practices.

The steel building is set on a 6 inch thick foundation constructed of 250 psf warehouse loading concrete. The concrete is 3,000 psi, Class A, ASTM and is reinforced with number 4, grade 60 rebar placed 12 inches on center. The floor is sealed with two coats of Sikagard 62 chemical resistant epoxy. A 1 inch deep expansion joint filled with Thiocaulk, a chemical resistant sealer, will provide crack protection for the two 20 foot sections of concrete floor. The elevation of the finished floor is 4 inches above the topographic surface, with a one and a half inch recessed outer ledge to preclude run-on during precipitation events from entering the facility.

Secondary containment system consists, in part, of a perimeter ring constructed of a two and one half inch wide and 6 inch high, 14-gauge galvanized Zee-bar which is bolted to the floor, sealed with Thiocaulk, mitered, and welded at the corners. The ring is on the interior of the building and it is adjacent to the wall structure.

Additional aspects of the secondary containment system include either a ramp or berm at all entrances and the above mentioned containment pallets. A 14 foot wide concrete ramp is located on the floor below the overhead door which provides access for waste transfer. A step type, concrete berm, located at each of the personnel access doors is constructed from the finished floor, to 6 inch above the floor.

All electrical wiring is designed to be protective from creating a source of ignition for reactive or ignitable wastes. Explosion proof electrical wiring, lighting, and outlets are installed

according to the National Code for Hazardous Atmospheres, Class 1, Division, Article 500, in the interior of the building. An emergency telephone and fire alarm pull box is located on the outside of the building.

Additional precautions that will be taken to prevent a source of ignition for reactive or ignitable waste are included in the handling of containers. Drums will be removed from the building by a WSTF certified "Waste Handler" (Permit Attachment II-4) using a drum dolly or similar non-motorized equipment. Motortized or power equipment will not be used inside the building. Outside of the building, power equipment may be used to load and unload containers from transport vehicles.

The maximum inventory of wastes that will be in storage at any one time in the Container Storage Unit is 2,640 gallons. No drum with a capacity of greater than 55 gallons will be utilized for storage of hazardous waste in this unit, with the exception of overpacks used for salvage purposes and packaging and shipment of asbestos and other contaminated dry goods.

PERMIT ATTACHMENT III-2
ANNUALLY PERMITTED WASTE FOR THE CONTAINER STORAGE UNIT

WASTE CODE	QUANTITY
D0014	(T)
D0023	(T)
D003	500 (P)
D004	10 (P)
D006	1000 (P)
D0073	(T)
D008	2(T) 1000 (P)
D0091	(T)
D011	150 (P)
D018	10 (T)
D019	10 (T)
D035	10 (T)
D038	10 (T)
D040	10 (T)
F0017	(T)
F002	1000 (P)
F0032	(T)
F0042	(T)
F0052	(T)
F006	10 (P)
F007	10 (P)
F008	10 (P)
F009	10 (P)
P068	500 (P)
P078	500 (P)
P082	150 (P)
U098	500 (P)
U099	500 (P)
U133	500 (P)

(T) - Short Tons Total 158,350 pounds
(P) - Pounds

Note 1: It is not possible to convert weights to volume due to density contrast of the various wastes.

Note 2: The permitted storage capacity of the Container Storage Unit, at any one time, is 2,640 gallons. The annual storage capacity, specified by the above individual waste codes, is 158,350 pounds.

PERMIT ATTACHMENT III-2
ANNUALLY PERMITTED WASTE FOR THE CONTAINER STORAGE UNIT

WASTE CODE	QUANTITY
D001	4 (T)
D002	3 (T)
D003	500 (P)
D004	10 (P)
D005	2 (T)
D006	1000 (P)
D007	3 (T)
D008	2 (T)
D009	1 (T)
DO11	150 (P)
D018	10 (T)
D019	10 (T)
D035	10 (T)
D038	10 (T)
D040	10 (T)
F001	7 (T)
F002	1000 (P)
F003	2 (T)
F004	2 (T)
F005	2 (T)
F006	10 (P)
F007	10 (P)
F008	10 (P)
F009	10 (P)
P068	500 (P)
P078	500 (P)
P082	150 (P)
U098	500 (P)
U099	500 (P)
U133	500 (P)

(T) - Short Tons Total: 158,350 pounds
(P) - Pounds

Note 1: Inaddition to the above waste codes, the permittee may store in quantities up to ten pounds of the waste codes identified in the Part A of Permit Attachment II-8.

Note 2: It is not possible to convert weights to volume due to density contrast of the various wastes.

Note 3: The permitted storage capacity of the Container Storage Unit, at any one time, is 2,640 gallons. The annual storage capacity, specified by the above individual waste codes, is 158,350 pounds.

MODULE IV - EVAPORATION TANK UNIT

IV.A. MODULE HIGHLIGHTS

IV.A.1. This permit authorizes treatment of hazardous waste in the 200 Area, Evaporation Tank Unit. The unit is located at the NASA White Sands Test Facility, approximately 20 miles northeast of the city of Las Cruces. The main components of the unit are two 147,000 gallon, open top, evaporative tanks. Waste deposits are alternated between the tanks to promote uniform evaporation. Wastes managed at the unit are produced during research and development operations at the facility. The entire operational portion of the unit is equipped with secondary containment.

IV.A.2. Information about design, operations, and secondary containment for the Evaporation Tank Unit are provided in Permit Attachment IV-1A through IV-1C respectively.

IV.B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

IV.B.1. The Permittee may treat in the evaporation tanks only hazardous wastes listed in Permit Attachment IV-2 (summary of Part A of the Permit application), subject to the terms of this Permit.

IV.B.2. The Permittee shall apply for and receive a Permit Modification prior to treating additional types of hazardous waste not identified by US EPA waste code in Permit Attachment IV-2.

IV.B.3. When the amount of any waste handled in a calendar year exceeds the amount listed for the corresponding waste code in Permit Attachment IV-2, the Permittee shall submit a report explaining the situation to the NMED. If the increase in annual quantities is expected to be repeated, the Permittee shall submit a revised Part A form by March 1 of the following year. New quantities listed in the revised Part A will be used to prepare a new Permit Attachment IV-2, which will then become part of this Permit. If management practices specified in Permit Attachment II-1 through II-6 and IV-1A through IV-1C change as a result of increases in a new annual quantity, the Permittee shall request a Permit Modification identifying the changes.

IV.C. SECONDARY CONTAINMENT

IV.C.1. The Permittee has designed, constructed and is operating the secondary containment systems for the Evaporation Tank Unit, in order to prevent the release of hazardous constituents into the environment as required by HWMR-6, Part V, § 264.193. Details of the design are described in Permit Attachment IV-1.

IV.C.2. The Permittee shall remove all liquids resulting from leaks, spills or precipitation entering into secondary containment in accordance with HWMR-6, Part V, § 264.193(b)(4) and (f).

IV.C.3. A hazardous waste determination shall be made, as required by HWMR-6, Part V, § 262.11, for all liquids removed from secondary containment.

IV.D. OPERATING REQUIREMENTS

IV.D.1. The Permittee shall not place hazardous wastes or treatment reagents in the tank system if they could directly or indirectly through chemical reactions cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail as required by HWMR-6, Part V, § 264.194(a).

IV.D.2. The Permittee shall prevent spills and overflows from the tank or containment systems using the methods described in Permit Attachments IV-1A, IV-1B and IV-1C~~IV-4~~ as required by HWMR-6, Part V, § 264.194(b).

IV.D.3. Hazardous waste shall be removed from the treatment tank in accordance with the facilities removal plan in Permit Attachment IV-1B (HWMR-6, Part VIII, § 268.50 (a)(2)).

IV.E. AIR EMISSION EVALUATION

IV.E.1. Volatile Organic Compound concentrations shall be monitored for all waste streams entering the evaporation tanks through the hazardous waste drain line component of the unit in accordance with Permit Attachments II-1 (Waste Analysis Plan) and IV-4, VOC Monitoring Plan and when effective, § 264.1083.

IV.E.2 Volatile Organic Compound concentrations shall be determined for all waste streams entering the evaporation tank from remote points of generation in accordance with Permit Attachments II-1 and IV-4 and when effective, § 264.1083.

IV.F. RESPONSE TO LEAKS OR SPILLS

In the event of a leak or a spill from the evaporation tanks, drain lines, drain line sump and the tank systems' secondary containments, or if a component of the unit becomes unfit for continued use, the Permittee shall remove the component from service immediately and complete the following actions (HWMR-6, Part V, § 264.196(a)-(f)):

IV.F.1. Stop the flow of hazardous waste into the unit and inspect the component to determine the cause of the release.

IV.F.2. Remove all waste and accumulated precipitation from the unit or affected component(s) within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the unit. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Secretary and demonstrate that a longer time period is required.

If the collected material is a RCRA hazardous waste, it must be managed in accordance with all applicable requirements of 40 CFR Parts 262-264. The Permittee shall note that if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 CFR Part 302.

IV.F.3. Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water.

IV.F.4. Contain nonvisible releases to the environment. The Permittee shall monitor volatile organic content of all hazardous wastes in accordance with Permit Attachment IV-4 for the purpose of preventing a threat to human health and the environment.

IV.F.5. Close the system in accordance with the Closure Plan, Permit Attachment II-7, unless the following actions are taken:

IV.F.5.a. For a release caused by a spill that has not damaged the integrity of the unit, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity ofthe unit

before returning the Evaporation Tank Unit to service.

IV.F.5.b. For a release caused by a leak from the primary liner to the secondary containment system, the Permittee shall repair the primary liner prior to returning it to service.

IV.F.6. For all major repairs to eliminate leaks or restore the integrity of the Evaporation Tank Unit, the Permittee must obtain a certification by an independent, qualified, registered professional engineer that the repaired unit is capable of handling hazardous wastes without release for the intended life of the unit or the units components before returning the unit to service. Examples of major repairs are typically structural in nature, such as replacement of a primary or secondary liner, or repair of any ruptured drain line piping.

IV.G. MONITORING AND EVALUATING RELEASES TO THE ATMOSPHERE

IV.G.1. When effective, the Permittee shall monitor hazardous waste emissions from the Evaporation Tank Unit in accordance with all applicable requirements of § 264 subpart CC, whereby demonstrating that hazardous waste constituent placed in the system, their quantity and their concentrations do not pose a threat to human health and the environment.

~~IV.G.2. Permit Attachment IV-4 describes a sampling and analysis plan for monitoring hazardous waste emissions. The plan shall be initiated at the time this Permit is issued, and at the end of one full year the Permittee shall evaluate effectiveness of the plan. Written results shall be submitted to the Secretary.~~

~~IV.G.3. If emissions pose a threat to human health and the environment, the Permittee shall revise the sampling and analysis plan and change the waste stream entering the evaporation tanks, or make other appropriate adjustments necessary to correct the situation.~~

IV.H. INSPECTION SCHEDULES AND PROCEDURES

IV.H.1. The Permittee shall inspect the Evaporation Tank Unit including ancillary equipment, in accordance with Permit Attachment II-3, the Inspection Schedule.

IV.H.2. The Permittee shall inspect the overfill controls, in accordance with the schedule in Permit Attachment II-3 and as required by HWMR-6, Part V, § 264.195(a).

IV.H.3. The Permittee shall inspect the following components of

the tank system once each operating day (HWMR-6, Part V, § 264.195(b)):

IV.H.3.a. Above ground portions of the tank system, if any, to detect corrosion or releases of waste;

IV.H.3.b. Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the Evaporation Tank Unit is being operated according to its design;

IV.E.3.c. Construction materials and the area immediately surrounding the externally accessible portion of the Evaporation Tank Unit, including the secondary containment systems, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

IV.H.4. The Permittee shall document compliance with Permit Conditions IV.G.1. through IV.G.3. and place this documentation in the operating record for the Facility as required by HWMR-6, Part V, § 264.195(d).

IV.I. RECORDKEEPING AND REPORTING

IV.I.1. The Permittee shall report to the Secretary, within 24 hours of detection, when a leak or spill occurs in the environment from any component of the Evaporation Tank Unit as specified by HWMR-6, Part V, § 264.196(d)(1). A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned-up, need not be reported as provided by the exemption HWMR-6, Part V, § 264.196(d)(2). Releases that are contained within a secondary containment system need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, this report satisfies the requirements of this Permit Condition in accordance with HWMR-6, Part V, § 264.196(d)(1).

IV.I.2. Within 30 days of detecting a release to the environment from any component of the Evaporation Tank Unit, the Permittee shall report the following information to the Secretary in compliance with HWMR6, Part V, § 264.196(d)(3):

a. Likely route of migration of the release;

b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Secretary with a schedule of when the results will be available. This schedule must be provided before the required 30-day submittal period expires;

d. Proximity of down-gradient drinking water, surface water, and populated areas; and

e. Description of response actions taken or planned.

IV.I.3. The Permittee shall submit to the Secretary all certifications of major repairs to correct leaks within seven days from returning the tank system to use (HWMR-6, Part V, § 264.196(f)).

IV.I.4. The Permittee shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the tank system as required by HWMR-6, Part V, § 264.192(g).

IV.I.5. The Permittee shall keep on file at the facility the written assessment of the tank system's integrity as

required by HWMR-6, Part V, § 264.191(a).

IV.I.6. The Permittee shall keep on file at the facility, for a period of three years, current records of the depth of each phase or transitional phases of waste being treated in each evaporation tanks as noted in Permit Attachment IV-1B and as required by HWMR-6, Part VIII, § 268.50(c).

IV.J. CLOSURE AND POST-CLOSURE CARE

IV.J.1. At closure of the Evaporation Tank Unit, the Permittee shall follow the procedures in the Closure Plan, Permit Attachment II-7 and in compliance with HWMR-6, Part 264.197(a).

IV.J.2. If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated, in accordance with the Closure Plan, then the Permittee shall close all components of the Evaporation Tank Unit and perform post-closure care following the requirements of HWMR-6, Part 264.197(b) and (c).

IV.K. SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

IV.K.1. The Permittee shall not place ignitable or reactive waste in the tank system or in the secondary containment system, unless the procedures specified in Permit Attachment ~~IV-5~~II-5 are followed in accordance with HWMR-6, Part V, § 264.198(a).

IV.K.2. The Permittee shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1977 or 1981) and as stipulated by HWMR-6, Part V, § 264.198(b).

IV.L SPECIAL TANK PROVISIONS FOR INCOMPATIBLE WASTES

IV.L.1. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same tank system or the same secondary containment system, unless the procedures specified in Permit Attachment ~~IV-5~~II-5 are followed as required by HWMR-6, Part V, § 264.199(a).

IV.L.2. The Permittee shall not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material,

unless the requirements of Permit Condition VI.J.1. are met as required by HWMR-6, Part V, § 264.199(b).

IV.M. COMPLIANCE SCHEDULE

The Permittee shall comply with report submittal times discussed in Permit Attachment IV-5, and as required by HWMR-6, Part V, § 264, Subpart J.

PERMIT ATTACHMENT IV-1A
EVAPORATION TANK UNIT
DESIGN

Abstract

This section describes the NASA White Sands Test Facility's Evaporation Tank Unit and ancillary equipment design for demonstrating compliance with the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart J.

Introduction

The 200 Area Evaporation Tank Unit consists of two 147,000 gallon capacity steel tanks, and a 4 inch drain line with a 370 gallon in-line sump tank. Hazardous waste is conveyed to the tanks either through a gravity flow drain line system from nearby generators in the 200 Area and the adjacent 800 Area, or by truck from other remote generation points at the facility. Hazardous waste brought in from remote locations is conveyed to the unit at the drum pumping station that is situated between the two evaporation tanks.

Evaporation Tanks

The two evaporation tanks are 79 foot in diameter (horizontally), with open tops (Figure IV-1-1). They rise 6 1/4 feet above the final surfaced grade. In design, the tanks are identical. The tanks consist of three containment components: a self supporting 1/4 inch carbon steel structure in the outermost position; and two inner, 30-mil PVC membranes that are separated from each other and from the self supporting portion of the tank by geotextile material (Figure IV-1-2). Each tank is equipped with six (6) turbine vents located around the tank wall (Figure IV-1-5). The vents are designed to remove excess air between the carbon steel supporting structure and the liners to minimize liner movement during winds. Secondary leak protection is provided by the outermost PVC membrane. A sight glass between each component provides leak detection in the tank and this is further discussed in Attachment IV-1C.

The tanks were assessed in 1991 for their resistance to soil corrosion. It was concluded that the estimated service life would be 16 years. The independent certified professional engineer recommended that, "The tanks be used in their present condition without upgrading the cathodic protection system, for a period of 10 years from their installation date." The tanks were installed in fiscal year 1988, and put into operation in fiscal year 1989.

Dimension were selected for each tank to provide a maximum capacity of 147,000 gallons in addition to including a 2 foot freeboard. The designed freeboard is intended to prevent

overtopping from wave or wind action and additions from storm precipitation.

Pressure control valves are unnecessary since the tanks operate at atmospheric pressure. All valves in the tank unit are manually operated. Flows to either evaporation tank can be shut-off entirely for the purpose of maintenance or an emergency.

For the protection of migratory fowl and other wildlife, a net has been installed over the tops of the tanks and a chain link fence surrounds the entire periphery of the unit.

A warning light and a automatic telephone dialing system is in place to notify facility personnel when the active tank has reached design capacity. When the capacity has been reached, a manually operated valve is regulated to switch the drain line waste transfers to the then inactive tank or entirely shut-off the drainage to either tank. Further discussion of this safety system is discussed in Attachment IV-1B.

Drain Line Pipe

The drain line pipes are specifically designed for conveying liquid hazardous wastes from the 200/800 and LABCON area buildings to the evaporation tanks (Figure IV-1-3). Initial installation of the drain line was in fiscal year 1990, and it was first used in fiscal year 1991. Subsequent construction and upgrading took place fiscal year 1991 and 1992.

~~Primary drain line construction of the 200/800 portion is a filament wound fiberglass reinforced vinylester pipe with a five hundredths inch integral reinforced liner. All of the fittings are of the same construction. A two part vinlyester thermoset adhesive was used to assemble all components.~~

~~Secondary drain lines for the 200/800 Area connects the building drain lines to the primary drain line. Its construction is a filament wound, fiberglass reinforced, epoxy pipe with an integral epoxy liner. All connector fittings are a two piece compression mold, epoxy reinforced fiberglass attached with a two part amine cured epoxy resin.~~

The drain line pipes consist of a primary drain line surrounded by a secondary containment line. The primary drain lines for 200/800 Area section and the Sump/Evaporation Tank section are filament wound, fiberglass reinforced vinylester pipe with a five hundredths inch integral reinforced liner. The primary drain lines are assembled with fittings of the same construction and a two part vinlyester thermoset adhesive. The secondary containment line is a filament wound, fiberglass reinforced,

epoxy pipe with an integral epoxy liner. The secondary containment lines are assembled with compression molded, two piece epoxy reinforced fiberglass fittings and a two part amine cured epoxy resin.

~~The latest extension of primary drain line was added to the uppermost end of the 200 Area drain line in the LABCON section of Building 200. Construction of this portion of the primary drain line is centrifugally cast reinforced vinylester pipe with a 55 millimeter pure resin liner. All connector fittings are of the same materials used in the primary drain line. A two part vinylester adhesive was used to assemble the components.~~

~~Secondary drain lines for the LABCON area is of the same construction as that of the primary drain line for the LABCON~~

~~section, with the exception of having a 30 millimeter liner instead of 55 millimeters. Fittings are also the same.~~

The latest extension to the drain lines, the LABCON section, was added to the uppermost end of the 200 Area drain line in the LABCON section of Building 200. The primary drain line for the LABCON section is centrifugally cast reinforced vinylester pipe with a 55 millimeter pure resin liner. The primary drain line is assembled with fittings of the same material and a two part vinylester adhesive. The secondary containment line for the LABCON section is centrifugally cast reinforced vinylester pipe with a 30 millimeter pure resin liner. the secondary containment line is assembled with fittings of the same material and a two part vinylester adhesive.

The upgradient portions of the ~~primary~~ drain line~~s pipe~~ are buried below ground while the lower portion, some 127 feet down gradient from a sump tank, is all above ground to the evaporation tanks (Figure IV-1-3).

The sump tank, shown in Figures IV-1-3 and IV-1-4 is considered to be an integral part of the drain line system.

Drain Line Sump Tank

The drain line sump tank is situated approximately midway along the drain line system where three inlet lines intersect with the one outlet line (Figure IV-1-3). Secondary containment is provided by a double wall with the necessary storage capacity in between. The holding capacity of the primary tank is about 370 gallons. Secondary containment and leak detection meet requirements of HWMR-6, Part V, Subpart J (Figure IV-1-4).

All of the vertically cylindrical tank is positioned below finished grade and within a square walled, vertically lined, concrete pit. At its base the pit is unlined. The lower portion of the tank is bedded in a fine homogeneous sand which in turn rest upon native soil.

Construction of the tank is rigid, double walled, reinforced resin plastic. Interior dimensions of the inner wall are 48 inches across (horizontal diameter) by 51 inches in height. Those for the outer wall are 72 inches inside diameter by 62 inches in height. Interior and exterior wall thicknesses are inch. Six inch bond pipe legs are installed at the base of the double tanks in order to separate and support the inner tank from collapsing onto the outer tank.

All three inlet drain line pipes connect through the top of the tank's cover plate and the one outlet drain line pipe connects on centerline, nine inches below the top of the tank.

The cover plate is bolted to both the inner and outer tanks so that a pressure seal is formed. Besides the inlet pipes, the wiring for a moisture sensor, an ultrasonic level sensor and a 4 inch diameter sample port all attach to the top of the cover plate. The sampling
port rises 75 feet above the cover plate, and high enough above the retaining walls to facilitate ease of access at finished grade.

Remote Truck Transfers

Hazardous waste brought to the evaporation tanks by truck is admitted into the tanks at the drum pump station. The station,

located between the two evaporation tanks and shown in Figure IV-1-1, is a sloped concrete pad with a blind sump. The pad and sump will accommodate leaks or spills from drums carried on the back of trucks that can maneuver into position over the concrete pad.

Hazardous waste removed from the evaporation tanks for off-site shipment will be pumped into tanker trucks. It is possible that some of these trucks may be too large to allow for their hose lines and connections to be protected from leaks or spills over the drum pump station's concrete pad and its containment. In such cases, all components of tanker trucks that have potential to cause leaks or spills will be protected by chemical resistant plastic sheeting secured to the ground and protected from being torn or punctured. The plastic sheeting will be set down so that any spill or leak will drain toward the concrete sump. If this cannot be accomplished, another method of collecting spills or leaks will be implemented.

PERMIT ATTACHMENT IV-1B
EVAPORATION TANK UNIT
OPERATIONS

Abstract

This section describes the NASA White Sands Test Facility's Evaporation Tank Unit and ancillary equipment operations for the purpose of demonstrating compliance with the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart J.

Introduction

The Evaporation Tank Unit, located in the 200 Area, receives hazardous waste from nearby generators in the 200/800 Area, or by truck from remote generation points at the facility. Those waste streams generated in the 200 Area and the adjacent 800 Area are conveyed to one of the evaporation tanks through a 4 inch gravity flow drain line used exclusively for hazardous waste. For the remote transfers, waste is brought to a "drum pump station", located between the two evaporation tanks. Wastes are then mechanically pumped from drum type containers or from tanker trucks, directly into one of the evaporation tanks.

Source and Nature of Waste Streams

Hazardous waste generated throughout the facility primarily consist of acidic and alkaline waste water generated during aerospace parts cleaning, and dilute concentrations of rocket fuels (hydrazines). Smaller quantities of waste are generated from laboratory testing~~,~~ and photographic ~~and battery~~ processing. All waste streams are water soluble and intentionally diluted with water to help promote chemical compatibility. Further information about chemical compatibility is discussed in the report on waste tracking (Permit Attachment II-1).

Treatment Process

Treatment of the waste in the evaporation tanks is primarily evaporation, but other processes do occur. The average annual rate of evaporation at the facility is about 60 inches per year. Other treatment processes include but are not limited to chemical, biological and solar induced reactions.

An internal policy is established that when a dense phase, similar in chemical composition to a contrasting lighter phase, develops in either of the tanks for a continual period of three months and sustaining a minimum thickness of 12 inches, then all but 3 inches of the dense phase will be removed. Total waste removal will not be attempted under the above conditions in order

to protect the primary liner from tears and abrasions potentially caused from removal operations. Liquid waste removal took place once after treatment operations began in fiscal year 1990, and this resulted from the need to evacuate one of the tanks in order to complete repair from a minor leak detected in the primary liner. In the next two years, no removal was deemed necessary. Waste may also be removed under other circumstances such as when tank capacities have been reached, or access is needed to make repairs, inspections and modifications. Records will be kept of all measurements taken on a ~~weekly~~ monthly basis of the depth and character of the waste including, whether stratified phases are present. When phase changes occur in the liquid waste, the record will indicate if they transitional or clearly separated.

For maintenance of adequate tank freeboard, liquid waste levels in the tanks are monitored every operating day. Prior to the tank levels reaching the four foot height, valves are manually regulated for changing the drain line flow of hazardous waste from one tank to the other. ~~This is typically done on a weekly basis.~~ At the time the liquid level reaches a 4 foot height in the tanks, an electric alarm and flashing light are activated. ~~These devices further trigger an automatic telephone dialer. Environmental personnel and drain line users are automatically notified to apprise them of the situation.~~ These devices further trigger an automatic telephone dialer that contacts the contractor Environmental Department and WSTF Fire Department.

Prevention of Hazards

Organized work plans for routine procedures, safety training, and engineered design features are elemental in the prevention of hazards.

Operational procedures at the evaporation tank unit are all directed by a general work plan. The current version is titled 200 Area Evaporation Tank System (Part B, Section 3.3.2). Each task is in turn detailed by the directives stated in an associated work authorizing document. In following these procedures, handling of waste will then be conducted in a manner that is safe to human and the environment, and designed for a successful treatment process.

Personnel performing tasks at the evaporative tank unit are all certified in-house as Hazardous Waste Handlers (Permit Attachment II-4, Training). This includes inspectors, sampling personnel, personnel handling waste transfers to or from the tanks, and personnel involved with operational maintenance and all repairs. Tasks such as unit entry, air quality monitoring to determine conditions safe to human health, and selection of appropriate personal protective equipment are examples of skills developed from the training program.

The unit design incorporates features that help prevent and reduce the severity of a potential hazard. Many features have

been incorporated into the design. These are discussed in the permit application and in other facility documents. One example is that all drain lines and associated tanks maintain secondary containment and leak detection devices, thereby minimizing the potential for a release (Permit Attachment IV-1C, Secondary Containment). Another example is that low concentrations of waste are maintained in the system in order to minimize effects from environmental and human exposure.

PERMIT ATTACHMENT IV-1C
EVAPORATION TANK UNIT
SECONDARY CONTAINMENT & LEAK DETECTION

Abstract

This section describes the NASA White Sands Test Facility Evaporation Tank Unit's secondary containment and leak detection systems, in order to satisfy the requirements of the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart J.

Introduction

Secondary containment and leak detection systems have been designed and incorporated into the Evaporation Tank Unit. Components of the unit, having separate secondary containment and leak detection designs, include the 2 evaporation tanks (Figures IV-1-1 and IV-1-2), the hazardous waste drain line (Figure IV-1-~~2~~3), and the drain line sump tank (Figure IV-1-~~3~~4).

Both evaporation tanks utilize the same containment and detection design. The design consists of a double plastic membrane supported by the tank's steel structure. An open ended glass tube, positioned beneath the primary (inner) membrane, extends outside the tank in order to observe the presence of liquid waste that potentially could escape into the secondary membrane. A second open ended glass tube positioned between the outer membrane and the steel supporting structure is used to detect liquid waste migration beyond the secondary containment.

For the hazardous waste drain line, the secondary containment and leak detection design use a double walled pipe equipped with a series of electronic ~~optical~~ sensors. Intermittent flows of liquid hazardous waste travel through the inner pipe. Leak containment and the detection sensors are within the surrounding, outer pipe.

The drain line sump tank is a double tank with one tank surrounding the other. Liquid waste flows through and is contained within the inner tank. The outer tank provides secondary containment for the inner tank, in the case of a leak. Leak detection is provided by an electronic sensor that is located at the interior base of outer tank.

Evaporation Tanks

The supporting structure of each evaporation tank is a 1/4 inch carbon steel shell. Primary and secondary containment is provided by two 30 millimeter PVC interior shell liners which are separated from one another and from the coated carbon steel tank

by geotextile and geonetting (Figure IV-1-~~1~~2). Drainage beneath the membranes is designed to collect at a low points near the base of the tank. Leak detection for the system consists of sight glasses that are placed beneath each membrane to collect and display escaped liquid waste. These are inspected ~~daily~~every operating day, enabling detection of accumulated liquids within a 24 hour time period. The design provides measures that prevent condensation from entering and accumulating in the system. This is accomplished by the continual purge of gaseous nitrogen between the component layers.

Drain Line Pipe

Specifications for the drain line pipe, including secondary containment are discussed in Permit Attachment IV-1A (Design).

~~Leak detection is provided separately for the upper and lower portions of the drain line. The upper portion, that section extending from upgradient of the sump ta Area buildings (Figure IV-1-3), utilize sensors. These are positioned at severa of the line. Additional detection is pr secondary containment of the sump tank. buildings, line and for the 200 Area bu: lowest electronic sensor are detected by lower portion, that extension of the pip sump tank, utilizes a sight glass locate tanks. The sight glass is located where drain line intersect each of the evapor: prevent internal condensation from occu: pipe, gaseous nitrogen is continually pu secondary.~~

Delete: #2,3
Add: #4,5,6

~~Drain line leaks into the secondary con one of two methods. Detected leaks fou sensors and from within the sump tank a... appropriate personnel by means of an automatic telephone dialing device. Those leaks detected at the sight glass are reported within 24-hours as a result of the routine daily inspection conducted at the evaporation tanks.~~

Leak detection is provided separately for the different sections of the drain line. The LABCON section, the latest extension to the drain system added to the upper end of the 200 Area drain line, (Figure IV-1-3), utilizes electronic liquid sensors positioned at several points along the length of the line. Leaks into the secondary containment are detected at a control box located in the LABCON area and are reported within 24-hours as a result of a routine inspections every operating day.

For the 200/800 Area section, the drain lines from the 200 and 800 Areas to the drain line sump, (Figure IV-1-3), leaks are

detected by an electronic sensor located in the sump's secondary containment. The drain system is designed such that the sensor provides leak detection for both the sump and 200/800 Area drain lines. Leaks detected at the sump trigger an automatic telephone dialer that contacts the Environmental Department and WSTF Fire Department.

For the Sump/Evaporation Tank section, the drain line from the sump to the evaporation tanks, (Figure IV-1-3), leaks are detected by a sight glass located at the evaporation tanks. A gaseous nitrogen purge is used to prevent internal condensation from occurring inside the secondary containment. Leaks detected at the sight glass are reported within 24-hours as a result of routine inspections every operating day.

Drain Line Sump Tank

Details of the secondary containment for the drain line sump tank are discussed in Permit Attachment IV-1A and are illustrated in Figure IV-1-4.

Leaks detected within the sump's secondary containment are derived from the upper portion of the drain line or from the primary containment of the sump. All of these leaks are monitored by a ~~moisture~~electronic sensor located at the low point of the secondary containment. When triggered, as a result of moisture

detection, the sensor activates ~~the same~~an automatic telephoning device ~~used for the drain line pipe leak detection system~~that contacts the contractor Environmental Department and WSTF Fire Department..

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PERMIT ATTACHMENT IV-2
ANNUALLY PERMITTED WASTE FOR THE EVAPORATION TANK UNIT

WASTE CODE	QUANTITY
D001	20 (T)
D002	18 (T)
D003	50 (P)
D004	75 (P)
D006	400 (P)
D007	400 (P)
D011	4 (T)
D018	10 (T)
D019	10 (T)
D023	10 (P)
D024	10 (P)
D025	10 (P)
D026	10 (P)
D035	10 (T)
D038	10 (T)
D040	10 (T)
F001	30 (T)
F002	6 (T)
F003	1 (T)
F004	4 (T)
F005	4 (T)
F006	75 (P)
F007	75 (P)
F009	75 (P)
P005	10 (P)
P068	106 (T)
P076	10 (P)
P078	6 (T)
P116	10 (P)
P119	10 (P)
U020	10 (P)
U098	100 (T)
U099	100 (T)
U133	40 (T)
U215	10 (P)

(T) - Short Tons
(P) - Pounds

Note: The total of weights listed above has an approximate volume of 120,000 gallons.

PERMIT ATTACHMENT IV-2
ANNUALLY PERMITTED WASTE FOR THE EVAPORATION TANK UNIT

WASTE CODE	QUANTITY	
DOO1	20	(T)
D002	18	(T)
D003	50	(P)
D004	75	(P)
D005	2	(T)
D006	400	(P)
D007	400	(P)
D008	3	(T)
D009	1	(T)
D010	10	(P)
DO11	4	(T)
D018	10	(T)
D019	10	(T)
D023	10	(P)
D024	10	(P)
D025	10	(P)
D026	10	(P)
D035	10	(T)
D038	10	(T)
D040	10	(T)
FOO1	30	(T)
F002	6	(T)
F003	1	(T)
F004	4	(T)
F005	4	(T)
F006	75	(P)
F007	75	(P)
F008	75	(P)
F009	75	(P)
P005	10	(P)
P068	106	(T)
P076	10	(P)
P078	6	(T)
P082	10	(P)
P116	10	(P)
P119	10	(P)
U020	10	(P)
U098	100	(T)
U099	100	(T)
U133	40	(T)
U215	10	(P)

(T) - Short Tons
(P) - Pounds

Note: The total of weights listed above has an approximate volume of 120,000 gallons.

PERMIT ATTACHMENT IV-4:
VOLATILE ORGANIC EMISSIONS MONITORING PLAN

Introduction

~~The following is a sampling and analysis (S&A) plan that has been developed to document the occurrence of volatile organic compounds (VOC) concentrations from the 200 area evaporation tanks. Changes in the plan may take place over time as a result of new information and upon approval of the secretary. At present, this plan may be considered a study. It has been speculative in developing an S&A plan that accurately produces representative results because of variability in the quality and quantity of the waste stream and the openness of the system to the atmosphere. The present and primary focus of this s&a plan is the hazardous waste drain line sump.~~

~~The purpose of the S&A plan is two fold. One issue is the need to know the waste stream for predicting and extending operational life of the tank system. The other is to monitor for adjusting waste stream concentrations to acceptable air emission levels as suggested by the proposed US EPA Rule published in the July 22, 1991 Federal Register.~~

The RCRA air emission standards, § 264 subpart CC, establish air emission requirements for owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDF). Compliance with the regulations involves implementation of emission controls or waste determinations to demonstrate that the affected unit is exempt from air emission control requirements. On the effective date of the regulations, the NASA White Sands Test Facility will operate the Evaporation Tank Unit as an exempt unit in accordance with all applicable requirements of § 264 subpart CC and will perform waste determinations as required to document compliance. This section describes the NASA White Sands Test Facility Evaporation Tank Unit's monitoring plan.

~~Background~~

~~Waste streams enter the 200 Area evaporation tank system by either the 200/800 Area hazardous waste drain line of from containerized vehicle transporters that pump waste directly. Knowledge of wastes from these two sources are obtained by different means, described below.~~

~~In order to understand the composition of waste in the evaporation tanks, 8 consecutive monthly sampling events were conducted in 1989. Grab samples were collected from each of the 2 tanks and analyzed using a Gas Chromatography/Mass Spectrometry method (an equivalent to EPA method 8240). Subsequent samples, analyzed by Method 8240A, are being collected on an annual basis.~~

~~Another study has been directed at analyzing the waste from the hazardous waste drain line. Six consecutive monthly sampling events were conducted in 1990 at the drain line sump using Method 8240 for analysis. Sampling will begin again and continue on a monthly basis at the drain line sump as further described throughout this S&A Plan. Containerized wastes transported to the evaporation tanks are analyzed by the waste tracking method described in the Waste Analysis Plan. Waste tracking amounts to a combination of routine chemical analysis and process knowledge that are maintained in a~~

"current" status. Details of chemical testing for the purpose of waste tracking are discussed further in the Facility's Waste Analysis Plan.

Test Methods

Several different analytical methods are presently being used to determine the appropriate type (s) of hazardous waste treatment for the various waste streams. Of particular interest are the methods used for waste streams that are destined for treatment in the Evaporation Tank Unit. The purpose for the analysis is to understand the volatile organic compound (VOC) concentration in the Evaporation Tank Unit and how the results may relate to protection of human health and the environment.

Method 5100, suggested for determining VOC concentration in conjunction with the proposed air emissions standards published in the July 1991 Federal Register, is being researched but is not commercially available at this time. Total speciation for VOC concentration determination will be made by RCRA Test Method 8240A. When Method 5100 or an equivalent method becomes available, NASA may apply to the New Mexico Environment Secretary for approval to change from using Method 8240A to Method 5100 for analysis of the VOC concentration at the Evaporation Tank Unit.

Test Method 8240 utilizes Gas Chromatography/Mass Spectrometry by the Packed Column Technique to derive a ppmw value for VOC. For the NASA waste stream analysis, freon will be added to the standard analyte list and hydrazine fuels will be analyzed using a NASA Ion Chromatography Method (Hz by IC)., Nasa White Sands Test Facility has the ability to perform the procedures of this method ' but may instead send collected sample to a commercial laboratory for analysis.

Test Method 8270 will be used to test Target. list some volatiles. Ion Chromatography using the Dionex Ic 4000I will be used to determine the concentration of the hydrazine fuels in the waste stream entering the evaporation tank via the sump. The family of fuels detectable by this method include hydrazine, Monomethylhydrazine, and dimethylhyrazine. The method is performed at the NASA facility and a description appears in Attachment 3.1 of the Part B RCRA permit Application, Fuel Analysis Procedures.

Test Method 9060, Total Organic Carbon (TOC), is being used by NASA to determine maximum VOC is a subset of' TOC, and as long as the concentration standard is not exceeded by TOC, then the VOC concentration will be less than the standard. This Method, however, will not work in the evaporation tank media because of the occurrence of algae. Algae and its byproducts concentrate carbon, producing results well above the current accepted standard of 500 ppmw. On the other hand, this method works well for containerized wastes before they are added to the Evaporation

~~Tank Unit. Algae is not typically present in these wastes.~~

~~Dilute hydrazine fuels, Containerized and, vehicle transported to the evaporation tanks, will be analyzed using Constant Current Coulometric Titration. Procedures for this; method appear in Attachment 3.1 of the Part B, RCRA Permit Application, Fuel Analysis Procedures. Using this method, it. will be verified that hydrazine concentrations meet the acceptance criteria is less than 330 ppmw in aqueous solution (about 0.1 ppm detected in air above the sample) before being added to the! evaporation tanks. Coulometric Titration is a basic method that does not have as high of an analytical accuracy as that of the Ion Chromatography Method mentioned above.~~

~~Additional parameters that will be determined in association with VOC concentration will be pH and flashpoint. Both parameters will be determined in a analytic laboratory.~~

Waste Determinations

Waste streams enter the 200 Area evaporation tanks either through the hazardous waste drain line or are pumped directly into the tanks at the drum pumping station. The NASA White Sands Test Facility will perform waste determinations at the point of waste origination or point of waste treatment for all hazardous waste discharged to the evaporation tanks.

The regulations allow the waste determinations to be performed either by direct measurement or knowledge of the waste. Whenever possible, knowledge of the waste will be used as the basis for the waste determinations. For hydrazine type wastes (N_2H_4, MMH, UDMH) containerized and transported to the evaporation tanks, process knowledge and airborne or aqueous phase hydrazine concentrations will provide the basis for waste determinations and a control strategy to limit the discharge of hydrazine waste to waste with a hydrazine concentration of less than 330 ppmw and volatile organic concentration as specified by § 264 subpart CC.

Methylated hydrazine waste (MMH, UDMH) discharged to the evaporation tanks through the hazardous waste drain line will be limited to waste with an average volatile organic concentration of less than 100 ppmw as specified by the RCRA Subpart CC regulations and a hydrazine concentration of less than 330 ppmw.

When possible, knowledge of the waste will serve as the primary basis for the for the other hazardous waste discharged to the evaporation tanks. Examples of the information used as the basis of a waste determination by knowledge of the waste are:

- Organic material balances for the source
- Volatile organic concentration measurements for the same type of waste performed in accordance with the requirements of EPA Method 25D or as specified by § 264 subpart CC.
- Documentation showing that the waste generating process does not involve the use of organic materials.
- Test data or information from which the total organic concentration can be computed. Examples include EPA Method 9060 (Total Organic Carbon), EPA Method 8240 (Volatile Organics plus Freon), EPA Method 8270 (Semivolatile Organics) and monitoring or analyses of hydrazines.
- Previous test data for other locations managing the same type of waste; or other knowledge based on manifests, shipping papers, or waste certifications.

Direct measurements by EPA Method 25D or as specified by § 264 subpart CC will serve as the basis for the waste determinations when the waste determination can not be made by knowledge of the waste. All samples will be collected and analyzed in accordance with the US EPA Document SW-846, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods and the requirements of EPA Method 25D in 40 CFR 60, appendix A or as specified by § 264 subpart CC.

Safety Measures

Portable monitoring equipment and protective clothing will be used as necessary to ensure the safety of sampling personnel. The monitoring equipment employed is appropriate to the waste types that will be sampled. If air contaminant levels exceed the Threshold Limit Values (ACGIH most recent addition), Sampling personnel will be required to use auxiliary breathing apparatus and appropriate protective clothing.

~~Sample Collection~~

~~This section of the S&A Plan Describes the methods to be used for collection of waste stream media from the Evaporation Tank Unit, drain line sump. The equipment required for sample collection is shown in Table IV-4-1. Prior to initiating the sampling event, sampling personnel should have all the necessary sampling containers on hand. These will be supplied by the WSTF laboratory. A work station will be set up at the sump with separate areas for decontamination of equipment, Field measuring instrument, and a sample container coolers ',box. Although these work areas should all be in the vicinity of the sump, they should be far enough removed so that the possibility of cross contamination (e.g. decontamination rinse water splashing on samples or field instruments) is eliminated.~~

~~Table-4-1 Sample Collection Equipment~~

~~US EPA Laboratory Method~~	~~Container Information~~	~~Preservation~~	~~Maximum Holding Times~~
~~9060 - Total~~	~~40 ml amber glass~~	~~Cool, 4 C.~~	~~28 days~~

organic Carbon (SW-846)*	VOA vial with teflon lined septum						
8240 - Volatile organics	"	"	"	"	Cool, 4 c., 50% HCI (,pH 2),	14 days	
Freon** (SW-846)	"	"	"	"	no headspace		
Hydrazine by I.C.***	"	"	"	"	"	"	" 14 days

* US EPA document, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods

** Freon is identified as Freon 113 (1,,I,2-Trichloro-1,2,2 - triflouroethane)

*** NASA WSTF Laboratory Method, WSTF LJI-320-31-173

Samples will be collected through the sump',B sampling port using EPA 600/1-84-076-3.4 Method III-9 (bailer). The bailer is constructed of clear teflon and is equipped with a bottom filling check valve. All constructed materials are compatible with the waste streams expected to be encountered,, and the bailer is dedicated solely to the sump sampling. Prior to each sampling event, the bailer will be triple rinsed with deionized water. Then triple rinsed with the sampling media. After completion of each sampling event, the bailer will be suspended by a stainless steel cable above the sump in the sampling port tube.

The following procedures should be used for sampling:

1) Remove the teflon bailer from where it is suspended above the sump.

2) Check the bottom ball check valve to make sure that the ball is free and will from a seal when the bailer is full and being removed through the sampling port of the sump tank.

3) Triple rinse the bailer and the cable with deionized water.

4) Slowly lower the bailer into the sampling port tube. Do not allow the cable to contact the ground or any other surface except the inside of the port tube. The contamination media surface has been contacted by the bottom of the bailer when a slight weight decrease is noted in the cable. Allow the bailer to sink into the liquid until it is full. Do not raise and lower the bailer in an attempt to speed up the bailing process. This would cause unnecessary aeration of the sampling media.

5) After the bailer has been filled, Slowly remove the bailer from the sump and through the sampling port.

6) Pour a small amount of media from the bailer into a clean container. Use the sampling media to triple rinse the bailer.

7) Select the filling sequence for the sampling containers such that the containers that will be analyzed for VOC are filled first. Semivolatiles will follow in the sequence when collected annually.

8) Repeat steps 4 and 5 for withdrawal of the sample.

9) Note if separate phases are present in the teflon bailer, by opacity contrast or color shade contrasts. Phases may be sharply or transitionally defined. If separate phases exist, separate samples will be collected for each.

10) Fill each sample bottle by allowing the sampling media to be slowly dispensed through the special bottom emptying stopcock. Tilt the container as the sample runs down the inside wall of the container. For VOC analyses, collect each sample in 40 ml amber glass VOA vials with a teflon lined septum, making sure that there are no trapped bubbles in the bottle . Do this by filling the vial to the point that the liquid actual stands above the top of the vial, and then placing the vial septum and cap on the vial. Check for bubbles by inverting the vial after the septum and cap have been secured and tapping the vial. Any vial that has bubbles must be reopened and refilled. Similar care should be taken to eliminate air bubbles from other sample containers being submitted for organic analyses.

13) Continue bailing as necessary to complete filling of sampling containers. Do not composite! (or mix) samples in a single container for subsequent filling of sample containers as this will cause undue sample aeration.

12) Rinse the bailer and the stainless steel cable with deionized water and allow to air dry. The bailer and the cable can then be suspended over the sump, within the sampling port tube.

Quality Assurance/Quality Control

The following plan has been developed to assure that meaningful and accurate reports are generated by sampling and analytical processes.

~~At least one replicate (duplicate) sample will be analyzed for each sample in order to verify the validity of the sample. This will be accomplished by showing an acceptable spread in the analytical results.~~

~~Matrix spike and matrix spike duplicates will be analyze d for all samples collected during all sampling events, due to the variability in the waste stream. A separate matrix spike and matrix spike duplicate will be collected for, every ten or less samples. In the case of this VOC Monitoring Plan, it is expected that only one sample will be collected during each sampling event.~~

~~Surrogate solutions will be spiked into blanks, standards, samples and i matrix spiked samples prior to all analysis.~~

~~Collection of field and trip blanks will be optional. In cases where cross contamination may have occurred and there is no analytical proof otherwise, the increased VOC concentrations will be attributed solely to the waste stream.~~

~~A field blank consist of deionized water or other media whose chemical composition is known. This specimen is opened only during the sampling event to help determine if an outside source contaminated the sample(s) during sample collection or at the time of the analysis.~~

~~A trip blank consist of deionized water that is sealed in a volatile collection bottle. This specimen is prepared at the laboratory prior to the sampling event, and remain unopened in the sample cooler box during the sampling event. It is not opened until they it is analyzed with the sample at the laboratory.~~

~~All quality assurance and quality control Procedures as specified in SW-846 will be performed and reported by the NASA laboratory or any off-site contractor laboratory performing the required analysis.~~

~~At a minimum, the laboratory performing the analysis will complete and document the above required analysis.~~

~~Chain of Custody~~

~~This section of the S&A Plan describes the methods to be used to ensure that the samples are tracked properly form the time of collection until the receipt of the samples by the laboratory. Once the samples have arrived at the laboratory, the sample tracking procedures will be handled by the laboratory's own internal procedures. The following sections describe the use and procedures to be followed by field sampling personnel in logging, labelling~~

and shipping of samples to the laboratory.

Field logbook - A field log entry is kept for each sample collected in the field.
Entries will include: location of sampling point; name and address of field contact; area-source of the waste; type of process producing the waste; type of waste; and number and volume of the sample collected.

Space is provided for comments and special field and weather conditions. Basic comments will include knowledge of recent waste movements collecting at the sampling point (e.g. "Waste from clean room entered the sump this morning.")

Additional comments may include: the purpose of sampling; description of the sampling point and the method used; sample distribution and how sample wag; transported; references to maps or photos of the site; field observations; any field measurements made (e.g. hydrazine interscan values); and signature of personnel responsible for observations.

Sufficient information will be collected in order to reconstruct the sampling event without-. relying on the collector's memory. The logbook will be stored safely.

Sample labels - Self-adhesive labels will be used that include: a label number; name of the collector; date and time of sampling, and place of collection. Labels will be affixed to sample containers prior to or at the time of sampling, and will be filled in at the time of collection.

Security seals - A seal will be attached t.o each sample containerin such a way that the seal breaks when the sample container is opened. The seal must be affixed to each container before it leaves the custody of the sampling personnel, and an additional seals will also be secured to the shipping vessel in the same manner,.

Additional chain of custody procedures not mentioned above will conform to SW-846, Vol.II, Chapter 9, Section 9.2.2.7, Chain of Custody.

Equipment Decontamination

The following procedures are to be used for decontamination of equipment:

Equipment used in sampling operations are either disposable or

~~reusable. The disposable type are placed in plastic bags for off site disposal. Example of disposable goods include soft goods such as rubber gloves or plastic sheeting over which sampling operations take place. Prior to removal of the rubber gloves, these are rinsed with deionized water. Reusable equipment is triple rinsed with deionized water before being placed in plastic bags. The reusable equipment is then transferred to the Ground Water Monitoring Office at the Facility where it is steam cleaned and bagged for later use. One exception to the decontamination of reusable equipment is the dedicated teflon bailer. It will not be decontaminated until it is no longer useable for its intended purpose. All contaminated water is transferred to the Evaporation Tanks Unit, evaporation tanks for treatment.~~

PERMIT ATTACHMENT IV-5
COMPLIANCE SCHEDULE FOR THE EVAPORATION TANK UNIT

The Permittee shall provide to the Secretary, the following information at the scheduled intervals indicated below:

1. Assessment Update of the Primary Containment (PVC Membrane)

Monitoring the performance of the primary (inner) PVC membrane shall be conducted on an annual basis, and in accordance the existing NASA evaluation program as recommended in the "Assessment of the Hazardous Waste Management System".

If deterioration of the membrane is detected, an expected useful life shall be estimated by a qualified professional engineer who is trained and experienced in such an evaluation.

Prior to the end of the expected useful life period, another evaluation shall be made to determine whether the expected useful life can be extended. This process shall be repeated until the membrane is no longer fit for service, the manufacture's warrantee expires or the membrane is replaced, whichever occurs first.

Results of membrane assessment monitoring shall be documented in report form. All report shall be maintained at the Facility and an additional copy shall be submitted annually to the Secretary, beginning April 1, 1993.

For any leaks, spills, disposition of leaking or "unfit for use" situations that develop in the primary membrane, procedures in HWMR-6, 40 CFR, 5 264.196 shall be followed.

2. Replacement of Primary and/or Secondary Containment Membranes

At no time shall the manufacture's warranted useful life of the primary containment membranes be exceeded for use in the Evaporation Tank Unit. The warrantee is for a 10 year period. Use of the membranes was initiated in October, 1988. Therefore the warrantee period shall expire in September 1998 and the useful life of the membranes shall. not exceed this date.

Since the secondary containment membranes are not in constant contact with liquid wastes, its useful life may be extended beyond the manufactures warranty, upon receipt of written approval from the Secretary. An engineering assessment,

certified by a qualified professional engineer will be required to support the extended use request for these membranes.

When the primary or secondary membranes are removed from service, installation of the replacement membrane shall be inspected in accordance with HNM-6, 40 CFR, 5 264.192(b). Verification that the now membrane was installed according to engineered specifications shall be provided in an inspection report. If any other than original design parts are intended to be used, they shall first be approved through a Permit Modification. Submittal dates for engineering reports will be contingent upon the necessity to upgrade the Evaporation Tank Unit.

3. Assessment Update of the Steel Structural Components

Monitoring the performance of the steel structural component with regard to corrosion of the components, bottom shall be conducted when the estimated useful life has expired. According to the engineering report, "Assessment of the Hazardous Waste Management System", the estimate is 10 years beginning at the time it was initially put into service. Operation of the Evaporation Tank Unit began in October, 1988. Therefore the structural component is approved for use in the treatment process of hazardous waste until September, 1998 or until either of the two steel structural components become unfit for use, whichever occurs first.

An updated assessment report certified by an independent professional registered engineer shall be:performed on or before September 1998 in order to determine necessary measures to extend the life of the steel structural component. Submittal of this report shall be no later than September 1998.

All intermittent assessment reports shall be maintained at the facility. Upon completion of the reports, a copy of each shall be submitted to the Secretary.

4. Final Engineering Assessment Report for the Entire System

The final engineering assessment report pertaining to deficiencies noted in Permit Attachment IV-3A shall be submitted to the Secretary by April 1993. The report shall discuss satisfactory completion of the drain line system and leak testing of the entire unit.

MODULE V - OPEN DETONATION UNIT

V.A. OPEN DETONATION - MODULE HIGHLIGHTS

V.A.1. This Permit authorizes treatment and disposal of hazardous waste explosives in the Open Detonation Unit. The unit is located in the 700 Area of the NASA White Sands Test Facility, approximately 20 miles northeast of the city of Las Cruces. The unit consists of an unlined sloped trench, surrounded by a protective berm.

V.A.2. Detailed drawings of the open detonation trench are provided in Permit Attachment V-I.

V.A.3. The Open Detonation Unit is permitted under HWMR-6, Part V, Subpart X due to the scheme of regulatory classifications. Regulatory standards cited within this Module and associated attachments reference HWMR-6, Part V, Subpart M (Land Treatment) and Subpart N (Landfills), since the Open Detonation Unit relates to certain aspects of these.

V.B. PERMITTED AND PROHIBITED WASTE

V.B.1. The Permittee may treat and dispose at the Open Detonation Unit only the hazardous wastes identified below in Table V-1, subject to the terms of this Permit.

V.B.2. The Permittee shall apply for and receive a Permit Modification prior to treating and disposing of additional types of hazardous waste not identified by US EPA waste code in Table V-1.

VB.3. When the amount of any waste handled in a calendar year exceeds the amount listed for the corresponding waste code in Table V-1, the Permittee shall submit a report explaining the situation to the NMED. If the increase in annual quantities is expected to be repeated, the Permittee shall submit a revised Part A form by March 1, of the following year. New quantities listed in the revised Part A will be used to prepare a new Table VI, which will become part of this Permit. If management practices specified in Permit Attachments V-2 and V-3 change as a result of increases in a new annual quantity, the Permittee shall request a Permit Modification identifying the changes.

Table V-1. **Permitted Wastes for the Open Detonation Unit**

Description of Hazardous Waste	EPA Waste Code Number	Annual Allowable Quantity
GROUP 1	D003	265 pounds
Pentaerythritol tetranitrate (PETN)		
~~Cyclotrimethylane trinitramine~~Cyclotrimethylene trinitramine (RDX)		
~~Cyclotetramethylene tetranitrumina~~Cyclotetramethylene ~~tetranitramine~~ (HMX)		
Trinitrotoluene (TNT)		
GROUP 2	D003	85 pounds
Mannitol Hexanitrate (HM)		
Lead Azide		
Black Powders		
Pentolite		
Hexanitrostilbene (HNS)		
Diazodinitrophenol Composition C4 Blasting Caps Detonating Cord		
Ether Alcohol Collodion		
Explosive Booster		
GROUP 3	D001	(Included in the 85 pounds for Group 2, but limited to 10 for each item in Group 3)
Potassium Nitrate		
Ammonium Nitrate		
Sulphur		
Aluminum Powders		
Single Based Smokeless Powders		
Double Based Smokeless Powders		
Potassium Chlorate		
Magnesium Powders		
Potassium Permanganate		
Ethanol		
Methanol		

V.B.3. The Permittee is prohibited from treating hazardous waste that is not identified in Permit Condition V.B.2., including shipping and storage containers for the waste explosives, except in cases where shipping and storage containers are contaminated with or stained by residues of explosives identified in Permit Condition V.B.2..

V.B.4. "Off-site source" refers to waste generated by sources other than the Permittee or sources other than the Permittee's contractor(s) operating on-site. This permit does not allow the Permittee to receive hazardous waste from off-site. If the Permittee is to receive hazardous waste from off-site, he shall apply for and receive a permit modification in accordance with HWMR-6, Part V, § 264.13(c) and Part IX, §§ 270.41 and 270.42.

V.C. DESIGN, CONSTRUCTION, OPERATIONAL AND MAINTENANCE REQUIREMENTS

V.C.1. The Permittee shall maintain the designed, and constructed Open Detonation Unit according to the drawings contained in Permit Attachment V-1.

V.C.1.a. The protective berm illustrated in Attachment V-1 shall be maintained in such a way that-. surface drainage will be eliminated from entering the active portion of the trench (HWMR-6, Part V, § 264.301(f)).

V.C.1.b. Warning signs shall be posted on all four sides of the Open Detonation Unit and as specified in HWMR-6, Part V, § 264.14(c).

V.C.1.c. Standing water will not be allowed in any portion of the trench. All standing water shall be removed within 24-hours after a precipitation event. Unless the water is chemically analyzed, it must be treated as a hazardous waste.

V.C.1.d. Maintenance associated with the Unit shall include removal of visible fragments of waste originating from treatment operations, including but not limited to metal casings.

V.C.2. The Permittee shall operate and treat waste in accordance with Permit Attachment V-2, Explosive Ordnance operations at WSTF.

V.C.3. All treatment shall consist of explosive detonation. No burning shall be permitted unless the Permittee applies for and receives a Permit Modification in accordance with HWMR-6, Part IX, §§ 270.41 and 270.42.

V.D. SAMPLING AND ANALYSIS

The permittee shall conduct a sampling and analysis program, utilizing methodologies and procedures approved by the Secretary and utilizing guidance recommended in Permit Attachment V-3 (EWMR-6, Part V, § 264.278(d)).

V.E. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the Open Detonation Unit on a weekly basis, after storms and in accordance with the inspection schedule in Permit attachment II-3 to detect evidence of deterioration, malfunction and improper operations of run-on and runoff control measures as specified in MM-6, Part V, § 264.273(g).

V.F. RECORDKEEPING AND REPORTING

The Permittee shall maintain in the Operating Record, inventory records that include descriptions, quantities and dates for each waste that is treated, in accordance with HWMR-6, Part V, § 264.73.

V.G. COMPLIANCE SCHEDULE

Item	Date Due for Presentation to the Secretary
Soil Sampling and Analysis Plan that incorporates recommendations proposed in Permit Attachment V-4.	April 1, 1993

PERMIT ATTACHMENT V-2
WASTE EXPLOSIVE ORDNANCE OPERATIONS AND SAFETY AT THE WHITE SANDS TEST FACILITY

This attachment delineates the minimum safety and procedural requirements for treatment of waste explosives at the US National Aeronautics and Space Administration (NASA),, White Sands Test Facility (WSTF). Both specific electric and non-electric firing systems are addressed.

~~All explosives will be detonated rather than deflagrated. Burning will not be allowed in the detonation trench.~~

Definitions

WSTF Ordnance Officer: An employee over 21 years of age who has acceptable previous explosives experience and is certified. ~~by the NASA Manager.~~

Assistant Ordnance Officer: A person with knowledge of explosives, initiators, and explosives operations. This person, when properly certified, will be required to conduct explosive ordnance operations in the absence of the WSTF Ordnance Officer. ~~Certification of the Assistant Ordnance Officer will be by the NASA Manager.~~

explosives: Includes any chemical compound or mechanical mixture which, when subjected to heat, impact, friction, ~~detonation~~shock, or other suitable initiation, undergoes a very rapid chemical change with the evolution of large volumes of highly heated gases which exert pressures in the surrounding medium. The term applies to materials that detonate or deflagrate.

prime: To place a detonator or detonating cord into a specially designed explosive material for the purpose of creating an explosion that will be transferred to an equal or less sensitive explosive.

detonating cord: a flexible cord containing a center core of high explosive and used to initiate other explosives

detonator: any device containing any initiating or primary explosive that is used for initiating a detonation.

safety fuse: a flexible cord containing an internal burning medium by which fire or flame is conveyed at a continuous and uniform rate from the point of ignition to the point of use, usually a fuse detonator

electro-explosive device: any of a variety of initiators that are

detonated from an electric current.

blasting cap: a detonator that is initiated by a safety fuse

counter charge: product explosive that is primed and used to detonate the waste explosives.

~~nonel: a nonelectric detonator that does not require the use of electric energy or a safety fuse to function.~~

fuse lighter: a pyrotechnic device for the rapid and certain lighting of safety fuse

~~safety fuse: a flexible cord containing an internal burning medium by which fire or flame is conveyed at a continuous and uniform rate form the point of ignition to the point of use, usually a fuse detonator~~

fuse cap (fuse detonator): a detonator that is initiated by a safety fuse; also referred to as an ordinary blasting cap ~~firing device~~

General Safety

All operations will require 2 ordnance personnel, the ordnance officer or ~~and~~ an assistant ordnance officer and a safety representative. During part of the treatment operation, and for safety purposes, one of the officers will observe from a distance and be available to radio for any emergency assistance.

Two way communications will be available between ordnance personnel and emergency response personnel. Explosives, both waste and product, will be transported to the unit in US Department of Transportation (DOT) approved containers and vehicles.

The Open Detonation (OD) Unit warning sign, indicating that operations are in progress, will be posted at all times during the treatment process. Permanent warning signs in both Spanish and English will be posted on all sides of the unit in accordance with Permit Conditions.

All treatable quantities of explosives will be dual primed to insure that detonation occurs. If one detonator fails, the other should explode.

Detonations will not take place when wind velocities exceed 20 miles per hour.

When practical and applicable, ~~the US Army Manual, AMCR 385-100~~the NASA Explosive Safety Standard will be used as a standard for explosive operations at the OD Unit. In addition, the US Department of Defence Ammunition and Explosive Safety Standards, DOD 5154.45, will be used as a reference.

Specific Non-Electric Firing System Safety

Before each treatment event, a timed test burn will be performed on 3-feet of safety fuse. This will help to estimate a reasonable time that can be expected after ignition of the fuse. A minimum of 3-feet of safety fuse will be used to prime all treatable quantities of explosives.

Fuse caps will always be inspected to assure that they are free of debris before they are attached to safety fuse.
All safety fuse will be cleanly out and at right angle to the length of the fuse.

Only approved tools will be used to cut and crimp fuse caps to the safety fuse and the initiating source.

Specific Electric Firing System Safety

Serviceability of electro-explosive devices will be checked prior to their being connected to a electrical circuit. The check will include continuity and resistance.

US Mine Safety Health Administration (MSHA) power limited devices will be used when checking serviceability of electroexplosive devices. A blasting galvanometer along with a blasting ohmmeter and a blaster's multimeter are typically used for this purpose.

Electro-explosive devices will not be used when electromagnetic hazards exist. All communication equipment and other equipment capable of generating radio frequency energy in excess of 0.01 watts per square centimeter will be analyzed prior to its use at the OD Unit when ordnance items are handled, to ensure the absence of electromagnetic radiation hazards.

Only the person making the final electric connection will be in control of the firing device.

Firing line will be grounded when not in use.
Personnel will be shielded from electro-explosive devices when making serviceability checks.

Operations will cease during the approach and during the event of a rain storm due to the potential for static electricity to cause an undesired ignition of explosives.

Before the electrical connections are made to an ordnance item, an operational check will be made of the circuit to verify that the control circuits to the ordnance are properly safeguarded to prevent premature activation.

Filament shunts, clips, or other short-circuiting devices being used will not be removed except during continuity testing and when the explosive ordnance device is ready for immediate activation.

No more than two pounds of explosives will be detonated at any one time. This is due to the length of the firing line. The total amount of explosives detonated will be limited by conditions of the Permit.

Specific Non-Electric Procedures

All necessary materials, including a 2-way radio for communication, will be transported to the OD Unit in a vehicle that is properly equipped and placarded. The OD Unit warning sign, indicating that operations are in progress, will be visible from all access points to the OD Unit during preparation and at the time of treatment. Explosives used in the treatment process will be hand carried from transport vehicles to the detonation trench. Safety fuse will be tested. A 3-foot length@ of fuse will be cut for a test burning. The timed-test burn will be conducted at a minimum distance of 50-feet away from all other explosives.

A counter charge of explosives will be primed with two nonels to satisfy the dual priming requirement. This assembly will be placed on the top of the waste explosives that are being treated. A single firing cap will be crimped to the safety fuse, and the fuse and the cap assembly will be taped to the 2 nonels. The fuse and cap assembly will be used to initiate the nonels, which in turn will detonate a counter charge and the waste explosives.

Check the OD Unit for hazards prior to detonation.
Insure that the detonation area is cleared by visuals inspection and give a vocal warning of the impending detonation.
Fuse lighters will be attached to the safety fuse and then lit.
Ordnance personnel will then retreat to a safe distance until after detonation has been completed, or

In the case of a misfire, a waiting time of at least 30 minutes plus the burning time of the fuse will be observed before approaching the trench. At this time, the cap and fuse assembly and/or the nonels will be replaced and treatment will proceed as specified above.

The OD Unit warning sign, indicating that operations are in progress, will be placed in a position so that the wording is not visible.

All explosives detonated in the OD Unit will be noted in a logbook. The notation will include the listing of the specific explosive and its quantity.

The amount of explosives detonated will be limited by conditions of the Permit.

Specific Electric Procedures

All necessary materials, including a 2-way radio for communication, will be transported to the OD Unit in a vehicle that is properly equipped and placarded. The OD Unit warning sign, indicating that operations are in progress, will be visible from all access points to the OD Unit during preparation and at the time of treatment. Explosives used in the treatment process will be hand carried

from transport vehicles to the detonation trench. A counter charge of explosives will be primed with two nonel to satisfy the dual priming requirement. These will be placed on the top of the waste explosives that: are being treated. One of the ordnance personnel, while shielded, will check serviceability of all electric explosive devices using an MSHA power limited, approved meter.

Five hundred feet of firing line will be extended out from the trench holding the waste explosives. Serviceability of the firing line will be checked.

One of the ordnance personnel will guard that end of the firing line from which the initiating current originates, keeping it grounded while the ordnance personnel initiating the detonation connects the electro-explosive device to the line at the trench. The electro-explosive device is taped to the 2 nonels.

The OD Unit will be checked for hazards prior to initiating the detonation. The ordnance personnel who will set-off the detonation returns to the end of the firing line, away from the explosives. This location is judged to be a safe distance for the amount of explosives being detonated. The ordnance personnel will insure that the detonation area is cleared by visual inspection and give a vocal warning of the impending detonation.

The ordnance personnel setting-off the detonation will then connect the firing device to the firing line and the electrical ground will be disconnected. The line will then be charged for the detonation.

In the case of a misfire, a waiting time of 30 minutes (plus the burning time of the fuse in cases where a fuse is present) will be observed before approaching the trench. At this time, the electro-explosive device and/or the nonels will be replaced and treatment will proceed as specified above.

The OD Unit warning sign, indicating that operations are in progress, will be placed in a down position so that the wording is no longer visible. This is done at the completion of a treatment session.

All explosives detonated in the OD Unit will be noted in a logbook. The notation will include the listing of the specific explosive along with quantities.

PERMIT ATTACHMENT V-3
EXPLOSIVE DISPOSAL PROCEDURES

Affected Organizations

This procedure is applicable to all White Sands Test Facility (WSTF) organizations generating surplus, unserviceable or hazardous explosives. The WSTF Ordnance Officer is directly responsible for insuring compliance with this procedure in operations where disposal of explosives is required.

Purpose and Scope

The purpose of the procedure is primarily to define the steps for proper disposal of explosives at the WSTF. Disposal must comply with requirements of the federal Resource Recovery and Conservation Act (RCRA) and the New Mexico Hazardous Waste Management Regulations (HWMR-6). All personnel associated in any way with explosives will be made aware of this procedure to assure safe handling, transportation and storage of waste explosives.

Definitions

Disposal	-	The process of treating by mean of detonation, those surplus, unserviceable or hazardous explosives.
Explosives	-	For the purpose of this procedure an explosive is defined as any chemical compound, mixture or device, the primary or common. purpose of which is to function by detonation with the instantaneous release of gas, heat and pressure.
EOD	-	Explosive Ordnance Disposal
Hazardous Explosives	-	Any explosive presenting an imminent danger to life or property. For example, malfunctioned detonators, blasting caps, explosive squibs or the like.
Surplus Explosives	-	Those explosives in the inventory that are still in serviceable condition, but are no longer required for testing, and for which a release for disposal has been obtained.
Unserviceable Explosives	-	Those explosives in the inventory being in any condition which renders them unfit for use. For example, bent pins, loose connectors, obvious defects, expired shelf life, etc.

Procedures

The WSTF Ordnance Officer will classify all explosives requiring disposal in accordance with the above definitions and obtain a release from the Test Director, contractor or vendor for disposal. Coordination will be accomplished with the Test Director, contractor or vendor on all items of explosive ordnance requiring disposal.

Safety will be paramount in all operations involving the disposal of explosives at WSTF. All disposal operations accomplished will adhere to the requirements of Permit Attachment V-2 (Explosive Ordnance Operations). The WSTF Ordnance Officer is directly responsible for the safe disposal of explosives on the WSTF. Procedural measures that are taken for disposal of hazardous and unserviceable explosives are listed below.

1. Disposal of hazardous explosives will be secondary in priority only to safety. Explosives deemed to be in a hazardous condition by the WSTF Ordnance Officer, Safety Officer and the Test Director will be immediately transported to the Open Detonation Unit for disposal if, in the opinion of the Ordnance Officer, Safety Officer or the Test Director, this can be accomplished. in such a way as to preclude any unplanned detonation of the item.

2. Surplus and unserviceable explosives will receive priority for disposal which will be exceeded only by the priority of safety and the disposal of hazardous explosives. Disposal of explosives will be accomplished to reduce inventory, accountability and any possible future hazards or liabilities associated with prolonged storage of these items.

3. Unserviceable explosives may be returned to the manufacture upon request. Malfunctioned items of explosive ordnance that do not present an imminent hazard to life or property may be returned to the manufacturer for analysis upon request. Hazardous items of explosive ordnance will not be transported or shipped off the facility, under any circumstances. All containers and labels used in the shipment of explosives off the facility, will comply with US Department of Transportation specifications.

PERMIT ATTACHMENT V-4
RECOMMENDATIONS FOR DEVELOPING A SAMPLING AND ANALYSIS PLAN FOR SOIL AT THE OPEN DETONATION UNIT

Introduction

The Open Detonation Unit is being permitted as a miscellaneous unit since this type of unit does not neatly fit into any one particular conventional unit type discussed in HWMR-6, Part V, § 264, Subpart I through O. During its operational life, the unit will be operated as a land treatment process. At end of its operational life, if all soil contaminants cannot be removed to acceptable limits, then the unit will be closed as a landfill and post closure ground water monitoring will be required. in and effort to prevent unwarranted releases of hazardous waste to the soil and potentially into ground water, recommendations for revising the existing soil monitoring program are presented below.

Sampling Methodology - Establishing Baseline, Data

Background levels of all applicable metals should be determined from four separate samples at four separate locations. Each background sample should be obtained from 2 feet below the ground surface, and all four sample locations should be approximately 75 feet east of the pit (area of undisturbed soils). All samples should be obtained using a hollow stem auger.

Sampling Methodology - Monitoring the OD Detonation Trench

It is recommended that the following sampling strategy be followed for the first two post-permit years in accordance with HWMR-6, Part V, § 264.278(b):

1. Scoop samples should include one sample from the wall of the trench and one sample from the bottom of the active portion of the trench, each taken semi-annually. The scoop sampling procedure can be used for composite as well as grab sample according to procedures in EPA publication 600/1-84-076-2.2.1.

2. Four vadose zone samples should be taken semi-annually from four separate locations beneath the bottom of the active portion of the trench (sub-pit). The four sub-pit samples should be taken from four separate soil borings, each at a depth of 2 feet. The samples should be obtained using a hollow-stem auger and should be non-composite samples (i.e. no mixing of the overlying soil column; it should be a single point sample from a depth of 2 feet). Material removed from the borehole should be returned to the same borehole from which it was removed and lightly packed. In order to prevent the possible introduction of contaminated

surface soil to the depth within a borehole, the upper 6 inches could be kept separate from the rest of the borehole soil and returned to the borehole as the upper 6 inches of backfill.

The first two years of semi-annual sampling should be done in order to determine if statistically significant increases of hazardous constituents occur in the wall of the active portion of the trench or beneath it.

If statistical calculations determine that a significant increase in hazardous constituents above background levels have occurred, then the NASA/WSTF should report the findings to the Secretary within 15 days of NASA's receipt of laboratory results. A second determination should be made immediately.

If the second determination verifies that a statistically significant increase of hazardous constituents above background levels has occurred, NASA will request a Permit Modification to address the migration of hazardous constituents from the pit. The request should be presented within 15 days of NASA's receipt of laboratory results. The Secretary will review the data and address the Permit Modification with regard to the EPA Health Based Action Levels for soil contamination. Further evaluation will be made by the Secretary as to the necessity for more detailed monitoring and assessment.

At the end of a two year period of sampling, if no statistical increase of hazardous constituents above background level has occurred in soil samples, then the following strategy will take effect.

Monitor samples should be taken annually from the active portion of the trench wall and bottom using the scoop method described for the semi-annual monitoring period. Four vadose samples should be taken annually using the same strategy required for the semi-annual monitoring period.

Sample Analysis - Baseline Data

Background soil values should be established for the Open Detonation Unit as mentioned above. Samples should be analyzed for total metals as opposed to TCLP metal analysis. TCLP was used for background samples during the 1989 sampling and analysis event. Obviously, no background sampling values need to be established for volatile or semivolatile organic constituents because background is considered to be zero.

Sample Analysis - Monitoring the Open Detonation Trench

Monitor samples should be analyzed for total metals as opposed to TCTL metals as stated in the Part B Permit,Application and as was done during the 1989 and 1990 sampling events. The reason for

~~recommending total metal analyses is so that an accurate track record of any increases in constituent contamination, not just those that exceed TCLP lower limits, can be obtained.~~

~~It is recommended that total metals analyses be conducted according to EPA SW-846 Method 6010, or a demonstrated equivalent method, for arsenic, barium, cadmium,, chromium,, lead, and silver; and Method 7740, or demonstrated equivalent method for selenium.~~

~~Sampling and analysis should also be done for all possible explosive residues. This should include, but not be limited to, analysis for TNT (2,4,6-Trinitrotoluene), RDX (Hexahydro-1,3,5,-trinitro-1,3,5-triazine), and HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetraeozine). The recommended analytical method is EPA SW-846 Method 8330 for explosive residues.~~

~~The following information should be provided for each sampling event:~~

~~1. Detailed QA/QC review~~

~~2. Raw data sheets from the laboratory, as well as summary sheets or tables. Each data summary sheet should clearly correspond to the proper data.~~

~~Statistical Analysis~~

~~The statistical analysis to be applied by NASA to analytical data is the Cochran's Approximation to the Behren's-Fisher Student's t-test found in HWMR-6, Part V, Appendix IV. Calculations should be done using the standard one-tailed table at the 0.05 level of significance found in Appendix IV. The results of the calculations should be reported to the Secretary within 15 days of receipt of lab results.~~

PERMIT ATTACHMENT V-4
SAMPLING AND ANALYSIS PLAN FOR SOIL AT THE OPEN DETONATION UNIT

Introduction

The following is a plan to monitor WSTF's Open Detonation (OD) Unit for potential contamination resulting from waste ordnance treatment. This Plan establishes the soil sampling and analysis procedures that will be conducted for the OD Unit. ~~as a requirement of the WSTF RCRA Part B Hazardous Waste Operating Permit.~~

Soil samples ~~will be~~ have been obtained from nearby soils to provide historical background data. ~~These data will be used to determine the amount of contamination, if any, present in the Unit due to treatment operations.~~

The OD Unit is a fenced section of the 700 Area solid waste landfill and contains a trench which is used to detonate waste and surplus explosives. The maximum permitted operating capacity is 350 pounds per year. Historically, greater than 80 percent of the total weight of explosives have consisted of pentaerythritol tetranitrate (PETN) and trinitrotoluene (TNT), and the actual quantity has ranged from 10.5 lb to 177 lb per year. The variety and quantity of explosives permitted to be treated in the Unit are identified in Module V, Table V-1.

Sample Parameters

Soil samples will be analyzed for Explosive Residues by EPA Method 8330 and Total Metals by EPA Methods 6010 and 7740. EPA Method 8330 is used for the detection of organic constituents in explosive formulations. The Total Metals analysis is for metals commonly found in explosive formulations, casings, and platings.

~~Background Data~~

~~Data are required to develop a baseline for background levels of all applicable metals. This baseline data will be determined from at least four separate samples obtained from separate locations. Each background sample will be obtained from approximately 2 feet below the ground surface, and all sample locations will be approximately 75 feet east of the pit (area of undisturbed soils). All samples will be obtained using an approved EPA sampling device and analyzed for Total Metals by EPA Methods 6010 and 7740.~~

Sampling Methodology

Open Detonation Unit Sampling

~~Surface and subsurface soil samples will be obtained semiannually (if OD operations are performed between sampling events) for the first 2 postpermit years. The monitoring will be extended if inadequate data are obtained due to long periods of inactivity:~~ Surface and subsurface soil samples will be collected annually (if OD operations are performed between sampling events) until closure of the OD Unit. To ensure that adequate data are obtained during periods of inactivity, sampling will be performed at least every two years until closure of the OD Unit.

1. Scoop samples, in accordance with the procedures in EPA publication 600/1-84-076-2.2.1, will be obtained from two locations within the OD Unit and will be analyzed for both Explosive Residues and Total Metals. One sample will be obtained from the trench wall and one sample from the trench bottom.

2. Auger samples, in accordance with the procedures in EPA publication 600/1-84-076-2.2.2, will be taken from four separate locations beneath the trench bottom. These samples will be taken at a depth of approximately 2 feet and will be noncomposite. If rocks are encountered limiting the depth of the Auger, the first foot of soil will be removed with a shovel (scoop), and the final depth will be obtained using the auger. All soils removed prior to sampling will be contained and returned to their original location in the pit.

Sample Analyses

Total Metals

The Total Metals by EPA Method 6010 will include the detection of arsenic, barium, cadmium, chromium, lead, and silver. EPA Method 7740 will be used for the detection of selenium.

~~Background soil analysis for total metal values will be established for the OD Unit. Monitoring samples will be analyzed for Total Metals to develop historical data and to determine if any significant increases in constituent contamination can be detected. The significant increase is defined by applying the Cochran's Approximation to the Behren's-Fisher Student's T-test (40 CFR 264 Appendix IV). Calculations will be performed using the standard one-tailed table at the 0.05 level of significance found in Appendix IV.~~

WSTF will sample the OD Unit trench by the frequencies stated above. The analytical results for total metals samples will be compared to the limits provided in Table-4-1. The limit values provided in this Table are representative of concentrations established at 75 % of EPA's most current health-based action levels for each of the metals. The source for each of the EPA action levels is provided.

TABLE-4-1 - LIMIT VALUES

Metal	As	Ba	Cd	Cr	Pb	Se	Ag
Action Level mg/kg	80	4,000	40	400	500	400	200
Source	1	1	1	1	2	3	1
Limit	60	3,000	30	300	375	300	150

1 Proposed Rule - Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities, Appendix A, Federal Register/Vol. 55, No. 145, July 27, 1990.

2 OSWER Directive 9355.4-02, EPA Memorandum, Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites, December 8, 1989.

3 Calculated value obtained using a RfD of 0.005 mg/kg/day from the IRIS database and calculations provided in Proposed Rule - Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities, Appendices D and E, Federal Register/Vol. 55, No. 145, page 30870, July 27, 1990.

If a statistical evaluation of metals data indicates that five percent or more of the measurements are expected to exceed the limits presented in Table-4-1, NASA will report the finding to the Secretary within 15 day of NASA's receipt of laboratory results. A second sampling will be performed within working 15 days of notification of the Secretary. The results of the second sampling and the statistical evaluation will be provided to the Secretary within 15 working days of receipt of the laboratory results.

The statistical analysis to be applied by NASA to analytical data is the tolerance interval procedure described in Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Draft Addendum to Interim Final Guidance (pages 51 to 56) and Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance (pages 6-11 to 6-15). This technique will be used to compare semi-annual and annual data to the limits presented in Table-4-1. The upper level of the

interval will be compared to the action level for each metal. If the upper limit exceeds the limit value the Secretary will be notified within 15 working days of receipt of the analytical results.

This method is used to calculate an interval that contains a specified fraction of the concentration measurements with a specified degree of confidence. NASA proposes a 95 percent average coverage with a 95 percent confidence.

Explosive Residues (EPA Method 8330)

Sampling and analysis will be done for TNT (trinitrotoluene), RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine), HMX (octahydro-1,3,5,7-tetranitro-1,3,5,7-tetracozine), plus the detection of PETN (pentaerythritol tetranitrate).

If the Explosive Residues analysis indicates reportable values for any constituents, NASA will report the finding to the Secretary within 15 working days of NASA's receipt of laboratory results. A second sampling will be performed within 15 working days of the notification of the Secretary. NASA willl provide the results of the second sampling to the Secretary within 15 working days of receipt of laboratory results.

~~Sampling Frequency~~

~~Sampling and analyses will be conducted on a semiannual basis. However, if no treatment activity has taken place between the scheduled sampling events, sampling will occur within 30 days after treatment activities and will then continue on a semiannual basis.~~

~~The first four sampling events (to be performed on a semiannual basis depending on the OD operations) will determine if hazardous constituents occur in either the trench wall or pit.If statistical calculations determine that a significant increase in metal or explosive residue concentrations above background levels have occurred, WSTF will report the findings to the NMED Secretary. The soils will be immediately resampled to validate the analytical results.~~

~~After the first four sampling events, this Plan will be reviewed by both parties (NMED and WSTF), and a modified Plan will be implemented into the permit if required. WSTF will notify NMED when the collection and analyses of the four sampling events have been completed.~~

Recordkeeping

All sampling results will be maintained in the contractor's environmental office. The following information will be maintained for each sampling event:

1. Detailed QA/QC review;

2. Raw data sheets from the laboratory, as well as summary sheets or tables;

3. Sampling notes depicting field observations, all specific sampling locations, and sampling methodology; and,

4. ~~Statistical analysis which will compare the analytical results over time by applying the Cochran's Approximation to the Behren's-Fisher Student's T-test (40 CFR 264 Appendix IV).~~Statistical evaluations of the analytical results will be performed.

Reporting

If explosive residues are detected by EPA Method 8330 or if statistical calculations determine that ~~a significant increase in metal concentrations, per EPA Method 6010 and 7740, have occurred above background levels~~ five percent or more of a metal's measurements are expected to exceed the limits presented in Table-4-1, WSTF will report the findings to the NMED Secretary within 15 working days of receipt of laboratory results. If the initial monitoring results are verified by resampling and analysis, WSTF will notify the Secretary within 15 working days of receipt of the laboratory results.

MODULE VI - WASTE FUEL TREATMENT UNIT

VI.A. MODULE HIGHLIGHTS

VI.A.1. This Permit authorizes the storage and treatment of hazardous waste fuels in the 500 Area, Waste Fuel Treatment Unit. The unit is located at the NASA White Sands Test Facility, approximately 20 miles northeast of the city of Las Cruces. Main components of the unit are two, 4,000 gallon steel tanks; one for storage, the other for treatment. Wastes managed at the unit are produced during research and development operations at the facility. The entire operational portion of unit is equipped with secondary containment.

VI.A.2. Detailed information about the unit's design, and operation are provided in Permit Attachment VI-1.

VI.A.3. The Waste Fuel Treatment Unit is permitted under HWMR-6, Part V, Subpart X because of the nature of the hypochlorination treatment process used to convert hydrazines to compounds that have a reduced risk to human health and the environment.

VI.B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

VI.B.1. The Permittee may treat at the Waste Fuel Treatment Unit, only the hazardous wastes listed below in Table VI-I subject to the terms of this Permit.

VI.B.2. The Permittee shall apply for and receive a Permit Modification prior to treating additional types of hazardous waste not identified by US EPA waste code number in Table VI-1.

VI.B.3 When the amount of any waste handled in a calendar year exceeds the amount listed for the corresponding waste code in Table VI-1, the Permittee shall submit a report explaining the situation to the NMED. If the increase in annual quantities is expected to be repeated, the Permittee shall submit a revised Part A form by March I of the following year. New quantities listed in the revised Part A will be used to prepare a new Table VI-1, which will then become a part of this Permit. If management practices specified in Permit Attachment II-2 through II-6 and Permit Attachment VI-1 change as a result of increase in new annual quantities, the Permittee

shall request a Permit Modification identifying the changes.

Table VI-1. **Permitted Waste for the Waste Fuel Treatment Unit**

Description of Hazardous Waste	EPA Waste Code Number	Annual Allowable Quantity
Hydrazines (diluted with at least 90% water) Gallons		36,500
Hydrazine	U133	
Monomethylhydrazine	P068	
1,1-dimethylhydrazine (unsymmetrical hydrazine)	U098	
1,2-dimethyl hydrazine (symmetrical dimethylhydrazine)	U099	

The total allowable quantity of 36,500 gallons is the amount that will pass through the two 4,000 gallon capacity tanks in any one calendar year.

I.B.2. The Permittee is prohibited from storing or treating hazardous waste that is not identified in Permit Condition VI.B.1.

VI.C. INTEGRITY ASSESSMENTS

The Permittee has provided a preliminary written assessment of the design (Permit Attachment VI-2), reviewed and certified by an independent, qualified registered professional engineer, attesting that the Waste Fuel Treatment Unit tanks will have sufficient structural integrity and will be acceptable for treating hazardous waste as described in Permit Attachment VI-2 and as required by HWMR-6, Part V, § 264.192. A final construction inspection assessment is required prior to the unit being operated in accordance with Permit Condition VI.K.

VI.D. SECONDARY CONTAINMENT

The Permittee has designed and will be operating the secondary containment system for the Waste Fuel Treatment Unit, in order to prevent the release of hazardous constituents into the environment as required by HWMR-6, Part V, S 264.193.

VI.E. OPERATING REQUIREMENTS

VI.E.1. The Permittee shall not place hazardous wastes or treatment reagents in the tank system if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail in accordance with HWMR-6, Part V, § 264.194(a).

VI.E.2. The Permittee shall prevent spills and overflows from the tank or containment systems using the method described in Permit Attachment ~~II-5~~VI-1 and in accordance with HWMR-6, Part V, § 264.194(b).

VI.F. RESPONSE TO LEAKS OR SPILLS

In the event of a leak or a spill from the tank system, from the secondary containment system, or if a system becomes unfit for continued use, the Permittee shall remove the system from service immediately and complete the following actions as required by HWMR-6, Part V, § 264.196(a)-(f):

VI.F.1. Stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

VI.F.2. Remove waste and accumulated precipitation from the system within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Secretary and demonstrate that the longer time period is required.

If the collected material is a RCRA hazardous waste, it must be managed in accordance with all applicable requirements of HWMR-6, Parts III-V. The Permittee shall note that@ if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 CFR Part 302.

VI.F.3. Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any

visible contamination of the soil or surface water.

VI.F.4. Close the system in accordance with the Closure Plan, Permit Attachment II-7, unless the following actions are taken:

VI.F.4.a. For a release caused by a spill that has hot damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.

VI.F.4.b. For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee shall repair the primary system prior to returning it to service.

VI.F.4.c. If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in HWMR-6, Part V, §§ 264.192 and 264.193.

VI.F.5. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault.

VI.G. INSPECTION SCHEDULES AND PROCEDURES

VI.G.1. The Permittee shall inspect the tank systems, in accordance with the Inspection Schedule, Permit Attachment ~~II-1~~II-3, and shall complete the items in Permit Conditions VI.G.2. and VI.G.3. as part of those inspections.

VI.G.2. The Permittee shall inspect the overfill controls, in accordance with the schedule in Permit Attachment II-3 and as required by HWMR-6, Part V, 264.195(a).

VI.G.3. The Permittee shall inspect the following components of the tank system once each operating day in accordance with HWMR-6, Part V, § 264.195(b).

VI.G.3.a. Above ground portions of the tank system, to detect corrosion or releases of waste;

VI.G.3.b. Monitoring and leak detection aspects (e.g., in-line pressure or flow metering gauges, liquid staining) to ensure that the tank system is being operated according to its design;

VI.G.3.c. Construction materials and the area immediately surrounding the externally accessible portion of the tank unit, including the secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

VI.G.4. The Permittee shall document compliance with Permit Conditions VI.G.2. through VI.G.3. and place this documentation in the operating record for the facility in accordance with HWMR-6, Part V, § 264.195(d).

VI.H. RECORDKEEPING AND REPORTING

VI.H.1. The Permittee shall report to the Secretary,, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment as required by HWMR-6, Part V, § 264.196(d)(1). A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned-up, need not be reported as stated in HWMR-6, Part V, § 264.196(d)(2). Releases that are contained within a secondary containment system need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, requirements of this Permit Condition will have been satisfied as provided in HWMR-6, Part V, § 264.196(d)(1).

VI.H.2. Within 30 days of detecting a release to the environment from the tank system or secondary containment system, the Permittee shall report the following information to the Secretary as required by HWMR-6, Part V, § 264.196(d)(3):

a. Likely route of migration of the release;

b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Secretary with a schedule of when the results will be available. This schedule must be provided before the required 30-day submittal period expires;

d. Proximity of downgradient drinking water, surface water, and populated areas; and

e. Description of response actions taken or planned.

VI.H.3. The Permittee shall submit to the Secretary all certifications of major repairs to correct leaks within seven days from returning the tank system to use in compliance with HWMR-6, Part V, § 264.196(f).

VI.H.4. The Permittee shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the tank system as required by HWMR-6, Part V, § 264.192(g).

VI.I. CLOSURE AND POST-CLOSURE CARE

VI.I.1. At closure of the tank system(s), the Permittee shall follow the procedures in the Closure Plan, Permit Attachment II-7 and comply with HWMR-6, Part V, § 264.197(a).

VI.I.2. If the Permittee demonstrates; that not all contaminated soils can be practically removed or decontaminated, in accordance with the Closure Plan, then the Permittee shall close the tank system(s) and perform post-closure care requirements that apply to landfills in accordance with HWMR-6, Part V, § 264.197(b) and (c).

VI.J. SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

VI.J.1. The Permittee shall not place ignitable or reactive waste in the tank system or in the secondary containment system, unless the

procedures specified in Permit Attachment II-5 are followed and that the requirements of HWMR-6, Part V, § 264.198(a) are met.

VI.J.2. The Permittee shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1977 or 1981) and as stipulated in the requirements of HWMR-6, Part V. § 264.198(b).

VI.K. COMPLIANCE SCHEDULE

The Permittee shall provide the following information to the Secretary:

	Item	Date Due to the Secretary
1.	Final as-built construction inspection and engineering certification by an independent professional engineer of the entire system and containment in accordance with HWMR-6, Part § 264.192	Prior to operating the unit. Operations are not allowed until approval of the certification has been issued by the V, Secretary
2.	As-built construction drawings for the tank treatment system and secondary containment	Prior to operating the unit
3.	Final tightness test report for each hazardous waste tank and all ancillary equipment in accordance with HWMR-6, Part V, § 264.192(d)	Prior to operating the unit
4.	Documented identification and implementation of a method or device that will be used to maintain the concentration of volatile organic compounds released to the air, at a level acceptable to the New Mexico Environment Department	Prior to operating the unit

Upon approval of these items, they will become a part of this Permit.

PERMIT ATTACHMENT VI-1
WASTE FUEL TREATMENT UNIT
OPERATIONS & DESIGN

Abstract

This section describes the operation and design of NASA's White Sands Test Facility Waste Fuel Treatment Unit for the purpose of demonstrating compliance with the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart X.

Introduction

The Waste Fuel Treatment Unit, located in the 500 Area, receives rocket fuels remaining after research and development (e.g. engine testing, laboratory blending) at the White Sands Test Facility. These fuels are brought to the unit from the 200, 300, 500 and 800 Areas, where they are then accumulated in sufficient quantities before being treated. Treatment is by oxidation, resulting in concentration levels that are acceptable for discharge of waste fuels into the Evaporation Tank Unit.

The site selected for the Waste Fuel Treatment Unit had previously been occupied by a non-RCRA storage and transfer unit for chemical oxidizer. Selection of the site was based upon its convenient proximity to the facility's largest generators of fuel waste and the presence of existing electrical power and water supply from the previous operation. In order to accommodate the new unit's design, working areas made of concrete have to be extended and peripheral grading will be reconstructed (Figure VI-1-1).

Components of the unit consist of a storage pad, a 4,000 gallon storage tank, a treatment pad, a 4,000 treatment tank, three chlorine gas cylinders, a 500 gallon sodium hydroxide tank, and numerous connecting pipelines with in-line valves, meters, gauges and pumps. All components will be suspended above the containment pads on legs or mounts.

Figures VI-1-1 through VI-1-3 will help to clarify operational and design features of the unit.

OPERATING PROCEDURES

Personnel

All operations at the Waste Fuel Treatment Unit involving the handling or treatment of waste fuels will be directed and performed by personnel certified as "Hazardous Waste Handlers" (Permit Attachment II-4).

Waste Transfer Plan

Loading and unloading of waste will occur within the concrete bermed treatment pad (Figure VI-1-1 and VI-1-2). This and the adjacent pad serve as a secondary containment vault. A single transport vehicle will back down the access ramp of the pad to a point where a wheel stop limits vehicle access to the unit. In this way, all pumps, hoses and connections will be operating within the containment vault. Wastes received at the unit will be off-loaded from the transport vehicle by dumping from drums or a tanker trailer into the storage tank. Waste fuels that have been treated, will be pumped from the treatment tank into a tanker trailer. Any leaks or spills occurring from routine operations will be contained within the containment vault.

Waste Storage Plan

Untreated waste fuels will be held in a storage tank located within the concrete bermed storage pad. For maintenance of required concentrations (10% or less), it will be determined if individual shipments must have water added before or immediately after the waste fuel is pumped to the storage tank. The fluid level of the storage tank will be monitored daily to assure that sufficient headspace exists in order to prevent overfilling. When a treatable quantity has been accumulated, it will then be pumped into the treatment tank.

Treatment Process

Treatment will take place in the treatment tank, located on the treatment pad. Before the treatment process begins, a sample will be taken from the storage tank batch and analyzed for hydrazines. This information will be used to determine the correct amount of treatment chemicals that will be needed to treat the waste. Water will be added to the waste to reduce the pretreatment concentration to less than 1%. During the treatment process, chlorine gas will be injected as the waste is being recirculated through the tank. Amounts of chlorine added to the treatment process are measured by an in-line flow meter and calculated by weight loss from the chlorine cylinder.

The pH will be maintained between 8 and 10 by adding caustic soda (sodium hydroxide) to the batch. During treatment, the pH will be electronically monitored by a pH meter and mechanically maintained by an electromechanical controller device and a pump. Caustic soda will automatically be transferred to the treatment tank when the pH falls below 8.

The temperature of the system will be maintained below 130 degrees fahrenheit by regulating the additions of chlorine gas.

The amounts of chlorine gas needed for the treatment process will

be based on the quantity and concentration of the fuel waste. Duration of the treatment will be dependent on the rate of the chemical reactions occur and the amounts of chlorine gas needed to complete the reactions.

After performing the treatment process, the waste will be sampled and analyzed in order to verify that the fuel concentration has been reduced to the desired level. If necessary, the batch will be retreated. Waste that has satisfactorily been treated will then be pumped into a tanker trailer and transported to the Evaporation Tank Unit for further treatment.

Operating Schedule

The treatment unit will operate on an eight hour work day and will be periodically monitored by personnel several times during an operating day. Based on current waste fuel generation, it is estimated that the unit will operate 600 to 800 hours each year.

DESIGN FEATURES

Treatment Pad (Secondary Containment)

The treatment pad serves as a secondary containment or containment vault for potential leaks from the treatment tank ancillary piping and wastes that are being transferred between tanks and transport vehicles. The treatment pad is 17 feet by 60 feet, and it is surrounded on three sides by a 12 inch high concrete berm. On the forth side, the access ramp rises from the level of the pad, up to 12 inches above the pad. Maximum containment of the vault is approximately 8,000 gallons.

Vehicle access is limited to one third of the treatment pad by the position of the wheel stop. The purpose of the wheel stop is to allow transfer vehicles to operate within the containment vault while protecting the units piping, other ancillary equipment and the treatment tank vault from vehicle damage.

All horizontal surfaces of the treatment pad will be coated with a 2 coat epoxy-novalac covering, selected for mechanical toughness and chemical compatibility. Vertical surfaces will be given additional coats since coat thickness will be thinner than on the horizontal surfaces. All joints will be filled with a coal tar urethane compound expansive calk which is compatible with the surface coating and will remain flexible.

All materials used in covering the concrete pad are specified and their application described in Appendix I.

The specified joint filler, although inspected on a routine basis for deterioration, will also be removed and replaced with

identical material not less than every 5 years. This will help to ensure that the integrity of the joint seal is maintained. All materials used are those in the attached product literature.

Treatment Tank (Secondary Containment)

The treatment tank is a 4,000 gallon, cylindrical, glass lined, carbon steel tank which will be oriented in a vertical position.

Storage Pad

The storage pad serves as a secondary containment or containment vault for the storage tank and ancillary piping, the caustic soda tank, and the chlorine gas cylinder. The storage pad is 16 feet by 35 feet. Surrounded on four sides by a 24 inch concrete berm, the vault will contain approximately 8,000 gallons. All horizontal surfaces of the treatment pad will be coated with a 2 coat epoxy-novalac covering, selected for mechanical toughness and chemical compatibility. Vertical surfaces will be given additional coats since coat thickness will be thinner than on the horizontal surfaces. All joints will be filled with a coal tar urethane compound expansive calk which is compatible with the surface coating and will remain flexible.

The specified joint filler, although inspected on a routine basis for deterioration, will also be removed and replaced with identical material not less than every 5 years. This will help to ensure that the integrity of the joint seal is maintained. All materials used are those in the attached product literature.

Storage Tank

The storage tank is a 4,000 gallon, cylindrical, glass lined, carbon steel tank which will be oriented in a vertical position.

Caustic Soda (NaOH) Tank

The caustic soda product storage tank is a 500 gallon, cylindrical, glass lined, carbon steel tank which will be oriented in a vertical position.

Chlorine Cylinders

The chlorine supply cylinders are stored on the west end of the storage pad. There will be three cylinders stored in this area. One will be active while the other two will be used for replacements. Chlorine will be fed by a negative pressure system so that if a leak were to occur, the loss of vacuum would cause the flow of chlorine gas to stop. The area will be monitored by a chlorine gas detector that would warn personnel of any leaks by means of an alarm system.

Air Emission Control

In order to prevent releases of excess volatile organic compounds (discussed in Permit Attachment IV-4 for the Evaporation Tank Unit) from being released to the atmosphere, an air filtration device will be incorporated into the system. Presently, a specific device has not been selected. However, a device that is approved by the New Mexico Environment Department will be installed prior to operating the unit (Permit Condition VI.K.).

ENCLOSURE #3

EDITED PAGES TO HAZARDOUS WASTE OPERATING PERMIT
NUMBER 8800019434-1

RESOURCE CONSERVATION AND RECOVERY ACT

HAZARDOUS WASTE FACILITY OPERATING PERMIT

FOR THE

US NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

WHITE SANDS TEST FACILITY

REVISED JUNE 1995

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iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the hazardous waste management unit, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.14.c. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of the occurrence including exact dates and times; and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Secretary may waive the five-day written notice requirement in favor of a written report within 15 days (HWMR-6, Part IX, § 270.30(l)(6)).

I.E.14.d. If the Contingency Plan is implemented, the Permittee must comply with the reporting requirements listed in Permit Attachment II-6, page II-23.

I.E.15. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, Permit Conditions I.E.1. and I.E.14., at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition I.E.14(b) (HWMR-6, Part IX, § 270.30(l)(10)).

I.E.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the

Secretary, the Permittee shall promptly submit such facts or information (HWMR-6, Part IX, § 270.30(l)(11)).

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Secretary, a designee, or authorized representative, shall be signed and certified in accordance with HWMR-6, Part IX, §§ 270.11 and 270.30(k).

I.G. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE SECRETARY

All reports, notifications, or other submissions which are required by this Permit to be sent or given to the Secretary should be sent by certified mail or given to:

Hazardous & Radioactive Materials Bureau, Chief
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502

I.H. CONFIDENTIAL INFORMATION

In accordance with HWMR-6, Part IX, § 270.12, the Permittee may claim confidential any information required to be submitted by this Permit.

I.I. DOCUMENTS TO BE SUBMITTED - COMPLIANCE SCHEDULE

The Permittee shall submit the following documents to the Secretary by the dates shown:

	Document	Due Dates
1.	Assessment of the Evaporation Tank Unit's primary containment, plastic membrane (Permit Attachment IV-5, Item 1)	Annually beginning 4/1/93
2.	Update assessment report to determine necessary measures to extend life of the steel structural component of the evaporation tanks (Permit Attachment IV-5, Item 3)	11/1/98
3.	Engineering assessment that addresses all Evaporation Tank Unit deficiencies noted in Permit Attachment IV-3A (Permit Attachment IV-5, Item 4)	4/1/93

4. Sampling and analysis plan for soil at the Open Detonation Unit (Permit Attachment V-4). Submit all draft versions prior to the required date. An approvable plan must be submitted by the required date. — 4/1/93

I.J. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, until closure is completed and certified by an independent, registered professional engineer, the following documents and all amendments, revisions and modifications to these documents:

1. Waste Analysis Plan, as required by HWMR-6, Part V, § 264.13 and this Permit.

2. Inspection schedules, as required by HWMR-6, Part V, § 264.15(b)(2) and this Permit. Logs must also be maintained as required by HWMR-6 V, § 264.15(d).

3. Personnel training documents and records, as required by HWMR-6, Part V, § 264.16(d) and this Permit.

4. Contingency Plan, as required by HWMR-6, Part V, § 264.53(a) and this Permit.

5. Operating record, as required by HWMR-6, Part V, § 264.73 and this Permit.

methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, then the Permittee shall inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this Permit.

II.D. SECURITY

In compliance with HWMR-6, Part V, § 264.14(a) and the Security Procedures Plan, Permit Attachment II-2, the Permittee shall prevent the unknowing entry, and minimize the possibility of unauthorized entry onto the active portion of the facility with the security measures described in Permit Conditions II.D.1 through II.D.3.

II.D.1. Warning signs in English and Spanish in compliance with HWMR-6, Part V, § 264.14(c); and

II.D.2. An artificial or natural barrier which completely surrounds the active portion of the facility in compliance with HWMR-6, Part V, § 246.14(b)(i); and

II.D.3. A means of control entry, at all times, through the gates or other entrances to the active portion of the facility in compliance with HWMR-6, Part V, § 264.14(b)(ii).

II.E. GENERAL INSPECTION REQUIREMENTS

II.E.1. The Permittee shall inspect the facility in accordance with an Inspection Log that includes, at a minimum, the information contained in Permit Attachment II-3 to detect deterioration, malfunction, operator error, and discharges required by HWMR-6, Part V, § 264.15(b).

II.E.2. The facility shall be inspected in accordance with HWMR-6, Part V, § 264.15(b)(4) as determined by the Permittee in Permit Attachment II-3.

II.E.3. The Permittee shall remedy any nonconformance which the inspection reveals in accordance with HWMR-6, Part V, § 264.15(c).

II.E.4. Records of inspection shall be kept, as required by HWMR-6, Part V, § 264.15(d). The records shall be kept for three years in the Operating Record, as required by HWMR-6, Part V, § 264.73(b)(5).

II.E.5. Areas subject to spills, such as loading and

unloading areas, shall be inspected daily when in use.

II.F. PERSONNEL TRAINING

The Permittee shall conduct personnel training, as required by HWMR-6, Part V, § 264.16. This training program shall include, at a minimum, the information presented in the attached outline, Permit Attachment II-4 (Personnel Training). The Permittee shall maintain the documents and records required by HWMR-6, Part V, 5 § 264.16(d) and (e) and Permit Condition II.K.1.c.

II.G. SPECIAL PROVISIONS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of HWMR-6, Part V, § 264.17(a). The Permittee shall follow the procedures for managing ignitable, reactive, and incompatible wastes set forth in Permit Attachment II-5 (Special Considerations) and Permit Modules III through VI.

II.H. LOCATION STANDARDS

The Permittee shall construct new units, and operate, and maintain the facility to prevent washout of any hazardous waste by a 100-year flood, as required by HWMR-6, Part V, § 264.18(b)(1).

In the event of a 100-year flood, the Permittee shall remove all hazardous waste, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to the flood waters, as required by HWMR-6, Part V, § 264.18(b)(1)(i).

II.1. PREPAREDNESS AND PREVENTION

II.I.1. Required Equipment

At a minimum, the Permittee shall maintain at the facility the communication, spill control, decontamination, and fire control equipment set forth in Permit Attachment II-6 (Contingency Plan) as required by HWMR-6, Part V, § 264.32.

II.I.2. Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.I.1, as necessary, to assure its proper operation in time of emergency, as required by HWMR-6, Part V, § 264.33.

PERMIT ATTACHMENT II-1
WASTE ANALYSIS PLAN

Introduction

This plan has been developed to satisfy the requirements of HWMR-6, Part IX, § 270.14(b)(3) and to provide sufficient physical and chemical data in order to store, treat and dispose of waste in accordance with all Federal and State regulations.

The plan covers those wastes which are hazardous, as defined in HWMR-6, Part II, § 261, and stored in the Container Storage Unit, treated in the Evaporation Tank Unit, disposed in the Open Detonation Unit or treated in the Waste Fuel Treatment Unit. Wastes that are not regulated under RCRA have not been included in this plan.

Coordination of all hazardous waste management is provided by the WSTF contractor Environmental Department. Determination for the appropriate treatment, storage and/or disposal method for each hazardous waste will be made by this group, utilizing chemical analysis and process knowledge from all waste streams. Figure II-1-1 generally illustrates the determination process.

Coordination of all chemical analyses is provided by the WSTF contractor Environmental Department. Analyses are either performed at the on site laboratory or shipped off-site to a commercial laboratory. In either case, analytic methods and procedures are limited to those approved by U.S. EPA and/or the Secretary.

Chemical analysis for some waste streams may not be desirable or necessary due to the chemical and physical nature of some wastes. In certain cases, process knowledge may be preferred. Examples of these include waste explosives, and nickel-cadmium batteries where the potential for a reaction or increased toxicity may develop. In other cases, certain parameters cannot be measured for all wastes. An examples of this is pH for organic oils and water insoluble solvents where hydrogen ions are not present. Only applicable parameters will be monitored. In addition, waste products and off-specification materials which can be clearly identified by process knowledge, container labeling and Material Safety Data Sheets information will not require detailed monitoring.

Generator Supplied Information

Before any waste stream can be placed in one of the four permitted units, the portion of the Facility generating an individual waste stream is required to supply certain information to the contractor Environmental Department. Parameters, purpose and test methods required of these waste streams are outlined in Table II-

1-1. Each generator supplies this information based on past analytical results for the waste stream or a similar waste stream where there is knowledge of the waste generating process. Waste stream samples will be collected and analyzed in cases that the generator cannot supply process knowledge. The contractor Environmental Department then coordinates the appropriate analyses to supply the required information.

Table II-1-1 **Generator Supplied Information**

Parameters	Rationale	Method
Physical Description	Used to determine the general physical characteristics of the waste; facilitates comparisons with subsequent samples of waste; changes in color, number of phases, clarity, etc., may be indicative of changes in the waste stream.	N/A
Flash Point	Used to determine if waste displays ignitable characteristic defined by HWMR-6, Part II, § 261.21.	SW-846 1010[1]
pH	Used to determine of waste is a corrosive waste as defined by HWMR-6, Part II, § 261.22; significant changes could be indicative of changes in waste characteristics and composition.	SW-846 9040[1]
Generating Process	Used to determine if waste is a listed hazardous waste as defined by HWMR-6, Part II, § 261.	N/A
Specific Gravity	Used because significant changes can be indicative of changes in waste characteristics and composition.	ASTM** D891[1] -86

* US EPA document, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods

** American Society of Testing materials

[1] Analysis to be performed by this method or an equivalent SW-846 method.

Updates of generator information are required when: 1) change occurs in the process generating the waste; 2) change occurs in the materials used in the process generating the waste stream; or 3) a calendar year has passed since the waste stream information was last updated and reviewed.

Waste Management- Sampling & Analysis

Container Storage Unit - The WSTF contractor Environmental Department will insure that sampling and analyses of all containerized liquids stored in the Container Storage Unit occurs on an annual basis. This will be used as a check to verify that no changes have occurred in the waste streams intended for containerized storage. Sampling procedures conform to those generally noted in the following discussion on sampling and sampling equipment. Analyses will be for physical description, flash point, pH, and specific gravity. The three latter analyses are outlined in Table II-1-1. Results of the analyses are compared with the information supplied by the generators of specific waste streams and any other previous analyses.

Evaporation Tank Unit - The WSTF contractor Environmental Department personnel will sample the evaporation tanks for parameters, frequency and analytical methods noted in Tables II-1-2a, II-1-2b, and II-1-2d (See Permit Attachment IV-4) and in accordance with the requirements of 40 CFR part 264 subpart CC, when effective. The WSTF contractor Environmental Department may require additional analyses or increase in the frequency of sample collection if site operations warrant more information.

Table II-1-2a **Evaporation Tanks, Analytical Data of Light Phase**

Parameters		Method
pH	Monthly	SW-846, 9040[1]
Physical Appearance	"	N/A
Hydrazines	Semiannually	WSTF LJI-320-31-173* or WSTF LJI-320-31-210***
Evolvable Cyanides	Annually	SW-846, 7.3.3.2[1]
Evolvable Sulfides	"	SW-846, 7.3.4.2[1]
TCLP Metals	"	HWMR-6**, Part II, §261. App.II,1311
Volatile Organics	"	SW-846, 8240[1]
Semivolatile Organics	"	SW-846, 8270[1]

[1] Analysis to be performed by this method or an equivalent SW-846 method.

* Determination of Hydrazines by Ion Chromatography Using Dionex IC 40001 (White Sands Test Facility, Laboratory Job Instructions)
**NM Hazardous Waste Management Waste Regulations, sixth version

*** Determination of Propellant Hydrazines in Aqueous Solution using High Performance Liquid Chromatography with Amperometric Detection (White Sands Test Facility Job Instructions)

Table II-1-2b **Evaporation Tanks, Analytical Data of Dense Phase**

Parameters	Frequency	Method
pH	Semiannually	Noted above
Physical Appearance	Monthly	"
Hydrazines	Semiannually	"
Evolvable Cyanides	Annually	"
Evolvable Sulfides	"	"
TCLP Metals and Volatiles	"	SW-846, 1311[1]

[1] Analysis to be performed by this method or an equivalent SW-846 method.

Sampling techniques and equipment used to sample contaminated waste from the evaporation tanks conform to instructions provided in the US EPA document SW-846, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, Volume II, Part III, Chapter 9, and other EPA recommended methods. The sampling device for evaporation tank waste media is a modified COLIWASA (Sludge Judge). This device will allow various phases to be identified and dispensed into separate containers.

If light, dense or transitional phases are present in the evaporation tanks, samples will be collected from each phase. In the case of transitional phases, the WSTF contractor Environmental Department will make the decision to sample intermediate phases from the tanks on the light or dense phase schedule in Tables II-1-2a and 2b respectively.

Equipment used in sampling operations will be either disposable or reusable. The disposable equipment will be shipped off-site for disposal. Reusable equipment will be triple rinsed with deionized water before being placed in plastic bags. All contaminated water will be transferred to the Evaporation Tank Unit for treatment.

Open Detonation Unit - An Ordnance Officer from the contractor Environmental Department is responsible for characterization of all Class A, B, and C type explosives prior to their treatment/disposal in the Open Detonation Unit. The Officer maintains a current file of pertinent Material Safety Data Sheets and a historical file of all explosives that have ever been detonated at the site. Record information include: date; item detonated; number of items; and types and quantities of explosive filler(s).

Soil samples will be collected annually from the OD Unit trench area (if OD operations are performed between sampling events) until closure of the Unit. To ensure that adequate data are collected during inactive periods, sampling will be performed at least once every two years until closure of the Unit. Samples will be collected, as specified by Permit Attachment V-4, for total metals (Methods 6010 and 7740) and Explosive Residues (Method 8330) analyses. Total metals' analyses are performed for arsenic, barium, cadmium, chromium, lead, and silver by Method 6010 and for selenium by Method 7740. Table II-1-3 provides a summary of the rationale for collection of samples from the OD Unit. Permit Attachment V-4 provides a detailed Sampling and Analysis Plan for the OD Unit.

Table II-1-3 **Open Detonation Mandatory Analyses**

Parameter	Rationale	Method
Total Metals	Used for the detection of arsenic, barium, cadmium, chromium, lead, silver and selenium within the OD Unit. These are possible constituents of explosive formulations that are permitted at the WSTF.	SW-846[1] 6010 and 7740
Explosive Residue	Used for the detection of organic constituents of explosive formulations that are permitted at the WSTF.	SW-846[1] 8330

[1] Analysis to be performed by this method or an equivalent SW-846 method.

Waste Fuel Treatment Unit - Waste fuel (hydrazine(s)) treated at the unit will be analyzed a minimum of three times prior to being transferred to the Evaporation Tank Unit, evaporation tanks. The initial analysis will be used to determine if the concentration of hydrazine(s) is less than ten percent by weight in solution. Solutions with concentrations greater than ten weight percent will be diluted with water prior to storage at the unit. When a treatable quantity of stored waste is collected, a second analysis will be performed to ensure that the waste fuel concentration is less than one weight percent and that the acceptable pH range is established. If the treatable fuel concentration is above one weight percent, it will be adjusted to below one weight percent by the addition of water. The necessary amounts of treatment chemicals will then be determined. The third analysis will be performed when the treatment is completed. At completion of treatment the concentration will be less than 330 ppmw in solution. Based on the existing 90 day tank treatment, concentration values are typically less than 10 ppmw in solution.

The analyses will be for hydrazine(s) by either coulometry, Ion Chromatography (IC) or High Pressure Liquid Chromatography (HPLC). During treatment, the hydrogen potential (pH) will be monitored to maintain pH during treatment. The specific analytical methods are outlined in Table II-1-4.

Table II-1-4	**Waste Fuel Unit, Mandatory Analysis**	
Parameters	Rationale	Method
pH	Monitored to maintain the correct pH range during the treatment process. The pH is monitored with a pH meter installed in the treatment system.	
Hydrazines by Coulometry	Used to determine the amount of chlorine oxidizable constituents in the waste.	WSTF LJI-320-31-145
Hydrazines by Ion Chromatography	Indicative of the hydrazines concentration of the waste fuel derivative analysis.	WSTF LJI-320-31-173
Hydrazines by High Pressure Liquid Chromatography	Indicative of the hydrazines concentration of the waste fuel.	WSTF LJI-320-31-210

Quality Assurance/Quality Control Program

The quality assurance/quality control procedures utilized by this program conform with the technical aspects in Chapters One through Nine in SW 846 and other EPA recommended methods.

All on site sampling and analytical activities are performed by the White Sands Test Facility personnel capable and qualified to perform the assigned duties. The facility laboratory management is charged with the responsibility to qualify the on-site personnel to perform analytical work, while the WSTF contractor Environmental Department management is required to qualify its personnel for sampling waste streams. These qualifications are based on individual employees proficiencies and abilities to perform the work. A list of qualified personnel is maintained at the facility and it is updated on at least an annual basis.

The contractor Environmental Department is responsible for ensuring that the samples are collected, preserved and transported appropiately and that all field documentation is correct and transported to the facility laboratory with the samples. The facility laboratory is responsible for ensuring that analyses of the samples are performed by the

An analysis sheet is required to accompany each sample that is delivered to the facility laboratory. The laboratory portion of the form will be completed by laboratory personnel and includes at a minimum: 1) name of person receiving the sample; 2) laboratory sample number; 3) date and time of sample receipt; and 4) analysis to be performed.

Once samples are collected, they can be sent off-site to a commercial laboratory for analysis or analyzed on site. Samples that are sent off-site for analysis are packaged and shipped as directed in SW 846 and the requirements of the commercial laboratory. In both cases, the on or off-site's laboratory custodian will receive, inspect and verify that the samples are correctly labeled and documentation is correct. Any discrepancies are resolved with the collector at the time of laboratory receipt.

The Quality Control designee is responsible for evaluating the accuracy and the precision of analytical data in order to establish the quality of the data. Furthermore, the designee will assure: 1) the analytical personnel possesses the level of expertise to perform the required analysis; 2) the appropriate analytical methods are used; 3) instrument calibration is performed as required; 4) split/spiked field samples, reagent blanks, surrogate spikes, matrix spike duplicate samples and check samples are included as required ; 5) column calibration samples and column blanks are utilized; 6) analytical results are statistically interpreted; 7) analytical results are updated; and 8) a complete analytical package is maintained.

Control criteria for QA/QC are followed by the facility laboratory and any contracting commercial laboratory that may be required to perform analytical work in support of the Waste Analysis Plan.

Land Disposal Restricted Waste

All waste being shipped off-site are considered to not meet treatment standards of the Land Disposal Restrictions (HWMR-6, Part VIII). The basis of this consideration is knowledge of process or sampling and analysis. If in the future wastes are analyzed for demonstration that they meet the treatment standards, this plan will be modified.

PERMIT ATTACHMENT II-3
INSPECTION PLAN

Introduction

Inspections are regularly performed by several departments of the NASA White Sands Test Facility (WSTF). Those portions of the facility and safety equipment pertinent to the RCRA hazardous waste management are inspected by the WSTF fire department, the electrical maintenance shop and the contractor Environmental Department.

Fire Protection

Inspection and testing of safety, security and emergency systems, fire control equipment and personal protective gear is performed by the WSTF Fire Department.

All fire hydrants and fire protection water risers are inspected semi-annually for static pressure, flow pressure and quantity discharge. All fire extinguishers are inspected monthly with pressure reading and recharging date noted. Fire response pumper trucks are back flushed every two weeks.

The entire WSTF's perimeter fence is inspected semi-monthly for breaks or other deficiencies, while individual areas are inspected every 8 hours during "non-working" hours for fires, fire hazards, leaking containers and valves.

Daily operational status checks are performed for all Fire Department personal protective equipment and weekly on all fire fighting equipment.

Records of all inspections are maintained by and at the Fire Department for at least three years. Besides information specific to each item inspected, records include: 1) where the inspection took place; 2) when the inspection occurred; 3) who performed a particular inspection; and 4) any deficiencies noted during the inspection and to whom any deficiencies were reported.

Electrical Maintenance

Inspection of all alarm and paging systems are performed monthly on a routine basis by the WSTF contractor Maintenance and Operation Section and the contractor Environmental Department. Any problems discovered during inspections are recorded and repairs documented in a discrepancy report. All reports are maintained in the electrical maintenance shop or contractor Environmental Department files for a minimum of three years.

Hazardous Waste Management Units

Safety equipment provided at each of the four RCRA hazardous

waste management units are routinely inspected by contractor Environmental Department personnel. All inspections are documented in a logbook which is maintained in office files for a minimum of 3 years. In addition to discrepancy reporting, the logbook includes: 1) what item(s) was inspected; 2) where inspection was conducted; 3) when it was conducted; and 4) who performed the inspection.

Discrepancies are brought to the attention of the contractor Environmental Department who is charged with the responsibility to coordinate response and document any discrepancies that have been corrected.

Discrepancy reporting noted in logbooks reference a separate discrepancy document that describes the problem. This document is used to initiate and direct corrective measures. After the appropriate corrections are made and recorded, the document is signed-off and maintained in contractor Quality Assurance/Quality Control records for at least three years.

Container Storage Unit

The Container Storage Unit is inspected at least weekly for at least the following items:

1) access doors being secured and locked;

2) number of containers in storage;

3) leaking from any containers;

4) deterioration of containers;

5) deterioration of secondary containment pallets;

6) presence of liquid in secondary containment pallets;

7) adequate pressure in the emergency combination shower/eyewash;

8) operations of the emergency telephone;

9) presence of any unusual odor;

10) posting of no-smoking signs; and

11) posting of restricted access signs

Evaporation Tank Unit

Inspection of the Evaporation Tank Unit is separate for the evaporation tank area, and that for the drain line and drain line sump tank.

Each of the 200 Area evaporation tanks is inspected for no less than those items listed in Table II-3-1.

Table II-3-1 **200 Area Evaporation Tanks Inspection Items**

Parameters	Frequency	Method
Freeboard	Every Operating Day	Adequate freeboard will be maintained.
Leak detection pipes	"	Leak detection sight glasses will be inspected for deterioration and for any fluid level.
Surrounding area	"	Inspected for leaks, spills or unauthorized discharge.
Odor	"	Any unusual odor will be noted.
Associated valves	"	Inspected for deterioration or leaks.
Access road	"	Inspected for obstructions or deterioration which can cause delays or hamper the movement of vehicles and other equipment.
Fence/access gate	"	Inspected for general condition or evidence of unauthorized entry.
Loading/unloading	"	Checked for spills, ponding of water and general area condition.
Housekeeping	"	Trash and debris pick-up, etc.
Tanks and foundations	"	Inspect for signs of corrosion, leakage or deterioration.
Gates	Weekly	Checked for obstruction(s).
Signs	"	Presence and legibility of proper warning signs.
Shower & Eyewash	"	Inspect for functional operation.
Lighting	"	Inspect for adequacy and operational condition.
High level beacon alarm	"	Functionally checked.

The 200 Area hazardous waste drain lines and the drain line sump are inspected for, at a minimum, the items given in Table II-3-2.

Table II-3-2 **Haz Waste Drain Line and Sump Inspection Items**

Parameters	Frequency	Method
Above ground piping	Every Operating Day	Inspect for evidence of leaks or deterioration.
Inside building pipes	"	" " " " " "
Sump pipes	"	" " " " " "
Valves	"	" " " " " "
Valve positions	"	Checked to assure valves are in their operating position.
Leak detection glass	"	Inspected for evidence of leaks and any evidence of fluids in secondary containment for the drain line between the sump and the evaporation tanks.
Line's optical detectors	"	Checked for alarm condition and insure that power supply is on.
Sump moisture sensor	"	Power light on and control key turned to normal.
Sump level sensor	"	Power light on and sump level displayed on the monitor.
Signs	Weekly	Presence and legibility of proper warning signs at the sump tank.
Shower & Eyewash	"	Inspect for functional operation.

Open Detonation Unit

The Open Detonation Unit will be inspected at a minimum for the following items on a weekly basis: 1) that the gate is closed and fences in good shape; and 2) that the appropriate "no entry" signs are present and legible.

Waste Fuel Treatment Unit

The Waste Fuel Treatment Unit, located in the 500 Area, will be inspected at a minimum for those items given in Table II-3-3.

Table II-3-3 **Waste Fuel Treatment Unit Inspection Items**

Parameters	Frequency	Method
Tank level	Every Operating Day	Inspect sight glass to insure that tanks have at least 10% headspace.
Tanks and foundations	"	Inspected for signs of leakage, corrosion or deterioration.
Surrounding evidence area	"	Inspect for leaks, spills or unauthorized discharge.
Odors	"	Any unusual odor will be noted.
Associated leaks	"	Inspected for deterioration or leaks.
Valves and piping	"	
Access Road	"	Inspected for obstructions or deterioration which may cause delays or hamper the movement of vehicles and equipment.
Fence/access gates	"	Inspected for general condition or evidence of unauthorized entry.
Loading/unloading	"	Check for spills, ponding of water and general area condition.
Housekeeping	"	Trash and debris pick-up, etc.
Gates	Weekly	Checked for obstructions.
Signs	"	Presence and legibility of proper warning signs.

PERMIT ATTACHMENT II-4
TRAINING PLAN

This training plan has been developed to assure that those WSTF employees involved with hazardous waste treatment, storage, and disposal receive adequate training in the proper procedures relevant to their job responsibilities. All training records are maintained in office files by the contractor Environmental Department.

Parts of this plan contain a descriptive outline for training courses and descriptions of employee positions.

Training Program

WSTF has developed a series of training modules which are taught by facility qualified instructors. These modules have been developed to assure that employees involved in WSTF's hazardous waste management activities receive adequate training to perform their job duties in compliance with all relevant federal and state regulations. Records for each employee include a syllabus and certification of completion for each course.

Individual training program will be supplemented with private and public sector courses when necessary. The Environmental Training Coordinator evaluates and makes determinations for the need for supplemental training. Consideration will be given for material not covered by those training modules outlined in this plan.

Training Modules

The training program is based on the training modules outlined in this plan and listed in Table II-4-1 These modules are taught as classroom sessions by facility qualified instructors. Where applicable, classroom training is supplemented and/or substituted with on-the-job training. Approved on-the-job training is documented by the Environmental Training Coordinator and a record is maintained in personnel records.

Table II-4-1 **WSTF Training Modules**

#1	Chemical Safety
#2	RCRA Regulations
#3	WSTF Environmental Procedures
#4	WSTF Contingency Plan
#5	200/500 Area Evaporation Tank/Fuel Treatment Systems
#6	Propellant Contaminated Waste Streams Handling

3. National Institute for Occupational Safety and Health

III. Hazard Communication - 29 CFR, Part 1910

A. Labeling Requirements
B. Material Safety Data Sheets

1. Identity of Hazardous Chemicals
2. Physical and Chemical Characteristics
3. Physical Hazards
4. Health Hazards
5. Primary Route of Entry
6. Exposure Limits
7. Carcinogenicity
8. Handling Instructions
9. Control Measures
10. Emergency and First Aid Procedures
11. Date of Prep
12. Name, address, phone of manufacturer

C. Exceptions

1. Retail Products
2. Office Products

D. WSTF contractor Environmental Department Procedure -"Hazardous Communications"

Training Module #2 RCRA Regulations

I. Background

A. Behavior of Chemicals in the Environment

1. Introduction
2. Dispersion Pathways

a. Ignitability
b. Corrosivity
c. Reactivity
d. Toxicity Characteristic Leaching Process

3. Fate of Chemicals in the Environment

a. Nonpersistent chemicals
b. Persistent chemicals

B. Resource Conservation and Recovery Act - 1976; 40 CFR, Parts 260-280

E. Enforcement Actions

1. Personal Criminal Liability
2. Revocation of Generator's I.D.

Training Module #3 **WSTF Environmental Procedures**

I. Environmental Department

A. Background
B. Present Objectives

II. Environmental Procedures

A. Landfill Operation

1. Purpose and Scope

a. Outline operating procedures for NASA/WSTF landfill

i. Hazardous waste as defined in 40CFR, Part 261
ii. Salvageable materials
iii. Items unsuitable for landfill

2. Summary

a. Operated by Technical Support Department
b. No liquids or sludge
c. No scrap metal (including barrels)
d. No concrete or asphalt
e. No batteries (alkaline/carbon-zinc batteries exception)
f. No hazardous waste
g. No burning
h. Questions-contact WSTF Environmental Department

B. Waste Tracking

1. Purpose and Scope

a. Provide communication mechanism for generating department to inform contractor Environmental Department of new and existing waste streams

b. Contractor Environmental Department

i. Identifies regulatory status of waste stream

(a) Hazardous waste
(b) Non-regulated hazardous constituent waste
(c) Non-regulated solid waste

ii. Recommends proper disposal

c. Maintenance of database for all NASA/WSTF waste streams

2. Summary

a. Generating department completes waste ID sheet for all of their waste streams

b. WSTF contractor Environmental Department

i. Identifies regulatory status of waste stream

(a) Hazardous waste
(b) Non-regulated hazardous constituent waste
(c) Non-regulated solid waste

ii. Recommends proper disposal

c. Annual review of all waste streams

C. Hazardous Waste Collection

1. Purpose and scope

a. Implement procedures for the proper accumulation of hazardous waste and specific non-hazardous wastes by the generating departments
b. Operation and maintenance of satellite accumulation areas
c. Provide tracking mechanism for wastes from generation point to ultimate disposal

2. Summary

a. Wastes to be accumulated in satellite accumulation areas
b. Waste containers will be numbered
c. Waste will be logged when added to container

D. Disposal of Spent Batteries

1. Purpose and Scope - Define Procedures for Disposal of Various types of batteries used at NASA/WSTF

2. Summary

a. Alkaline batteries - NASA/WSTF landfill
b. Carbon-zinc batteries - NASA/WSTF landfill
c. Lead-acid batteries

i. Do not drain
ii. Warehouse - reclamation

d. Mercury batteries - hazardous waste disposal/for recycle

e . Nickel-cadmium batteries

i. Flashlight size - hazardous waste disposal
ii. Large size

(a) Drain
(b) Hazardous waste disposal/recycle

f. Lithium batteries - hazardous waste disposal/neutralization

g. Silver-oxide batteries - hazardous waste disposal
h. Unidentified batteries - contact the WSTF contractor Environmental Department

E. Collection and Disposal of Used Oil

1. Purpose and Scope

a. Provide proper procedures for collection of used oil at NASA/WSTF
b. Assure hazardous waste oil is segregated from nonhazardous waste oil
c. Prevent handling of used oil at NASA/WSTF

2. Summary

a. Used oil that is not "Hazardous Waste" will be collected and handled separately from used oil that is "Hazardous Waste"
b. Oil will be collected in waste accumulation areas according to hazardous waste collection procedure
c. Warehouse will arrange for reclamation of nonhazardous used oil
d. Contractor WSTF Environmental Department will arrange for disposal of hazardous used oil

F. Waste Explosives Disposal - Open Detonation Unit

1. Purpose and Scope - Provide for proper on site disposal of explosives

2. Summary

a. WSTF Ordnance Officer will identify and dispose of all waste explosives at NASA WSTF
b. Disposal will occur at the open detonation area of the landfill

G. Operation of the Hazardous Waste - Container Storage Unit

1. Purpose and Scope - Define procedures for operation of the Container Storage Unit

2. Summary

a. All transportation of hazardous waste will be performed by certified hazardous

waste handlers
b. Doors will be kept locked, keys will be controlled by the WSTF contractor Environmental Department
c. No waste will be stored outside the facility
d. Delivery of hazardous waste must be coordinated through the WSTF contractor Environmental Department

H. Operation of the Waste Fuel Treatment Unit

1. Purpose and Scope define procedures for the operations of the Waste Fuel Treatment Unit

2. Summary

a. All transportation of hazardous waste will be performed by certified hazardous waste handlers.
b. Transfers and treatments will be performed by hazardous waste handlers who are qualified for chlorine handling/fuel treatment operations.
c. Fences will be maintained and the gates will be kept locked, keys will be controlled by the WSTF contractor Environmental Department.
d. Delivery of waste fuel must be coordinated through the WSTF contractor Environmental Department.

III. Implementation of the Contingency Plan

Training Module #4 **WSTF Contingency Plan**

I. Purpose

A. Protect human health and the environment
B. Prevent and control discharges to the environment
C. Identify resources to be used to respond to discharges
D. Outline response activities in the event of an emergency
E. Reporting spills as required

II. Responsibilities

A. Emergency Response Coordinator

1. Provide site-wide coordination

2. Reporting to regulatory agencies

B. Incident Commander

1. Directs response activities in emergencies
2. Coordinates activities at emergency site

C. Environmental Program Manager

1. Assumes proper hazardous substance release reporting
2. Approves post-emergency cleanup and decontamination activities

III. Emergency Procedures

A. General

1. Notification
2. Risk evaluation

1. Insure a profile sheet exists for the type of waste going into the hazardous waste sink drains
2. Use drains only for approved waste streams

B. Clean Room

1. LABCON Highbay

a. For cleaning large items
b. Solvents, caustics, acids, and water drained
c. Containerized waste drained into system

2. Indoor cleaning tanks

a. Tanks hold caustic and acidic solutions.
b. Solutions reused as much as possible
c. When drained into system, caustics and acids are not drained on same day
d. Discharges into drain lines must be logged.

C. Chemistry Laboratory

D. Metallurgy Laboratory

E. Prep Lab

F. 800 Decon Station

G. Etch Lab

H. Photo Lab

I. Environmental Department

III. Secondary Containment Systems

A. Inspections - the contractor Environmental Department will conduct daily inspections of the evaporation tanks, the drain lines, and the drain line sump secondary containment systems

B. Liquids Observed in Secondary Containment Systems

1. Notify contractor Environmental Department immediately
2. Leak observed in:

a. Tank

i. Switch drain line to non-leaking tank
ii. Pump fluid from leaking tank into non-leaking tank

iii. Using appropriate safety gear, repair leak
iv. Certify repairs independent,

registered, professional engineer

b. Drain Lines and Drain Line Sump

i. Inform personnel that hazardous waste drain lines will be closed (specify specific area)

ii. Isolate leaking section or component

iii. Remove and repair leaking pipe/sump

iv. Certify repairs - independent, registered, professional engineer

v. Return lines/sump to normal use mode

IV. Drain Line Valve Operation

A. Mark valves

1. When closing normally opened valves, affix tag with name of responsible person, the time and the date.
2. When opening normally closed valves, affix tag with name of responsible person, the time and the date.
3. Mark tank valves with time of initiating operation

B. Inform Area When Lines Are Closed

1. When an operation requires section(s) of drain lines to be closed, notify Area
2. Area notification can occur through paging system
3. After line is repaired, notify Area that lines are open

Training Module #6 **Propellant Contaminated Waste Stream Handling**

I. Chemical Review (MSDS)

A. Fuels

1. Hydrazine
2. Monomethyl hydrazine (MMH)

3. Unsymmetrical dimethylhydrazine (UDMH)
4. Aerozine-50 (A-50)
5. Hydrogen

B. Oxidizers

1. Nitrogen tetroxide
2. Liquid oxygen

II. Personal Protective Equipment

A. Totally Encapsulated Suits (ILC)
B. SCBA/SPLASH

III. Waste Treatment Systems

A. Totally Enclosed Treatment Facility

1. Definition
2. Exemptions

B. Fuel Vent Treatment Tanks

1. Design
2. Operation

C. Aspirators

1. Design
2. Operation

D. Decontamination Stations

1. Design
2. Operation

VI. Shipment of Waste Propellant Off-Site

A. Fuel

1. Container restrictions
2. Disposal or disposal costs

B. Oxidizer

1. Container restrictions

2. Disposal or disposal cost

Training Module #7 **Hazardous Waste Container Handling**

I. Chemical Safety Review of Module #1

II. Regulations

A. Container Definition
B. Satellite Accumulation
C. 90-Day Storage Restriction
D. Permitted Container Storage Area - Drum Storage Facility

1. Design

a. Secondary containment
b. Emergency alarm
c. Capacity

2. Operation

a. Logbook
b. Movement supervised by contractor Environmental Department trained hazardous waste handlers
c. Aisle space
d. Waste segregation

III. Waste Container Movement

A. Proper Equipment
1. Hand truck
2. Forklift
3. Bung wrench (non-sparking)
4. Lift-gate truck
5. Radio

B. Safety Equipment

1. Gloves
2. Apron or coveralls
3. Face shield

C. Procedure

1. Notify contractor Environmental Department

2. Using appropriate equipment, load container into transport truck, retrieve logbook for

container
4. Radio contact or 2 man communication required during operation
5. Transport waste to appropriate area
6. Using appropriate equipment, unload container
7. Turn logbook for container into WSTF contractor Environmental Department

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Training Module #8 **Hazardous Waste Shipments**

I. Packaging and Labeling

A. DOT Requirements - 49 CFR
B. EPA Requirements - 40 CFR
C. Hazardous Waste Labeling

II. Uniform Hazardous Waste Manifest

A. General

1. Tracking document for all hazardous waste from "cradle to grave,
2. Legal liabilities

B. Generator
C. Waste Description
D. Hazard Class
E. Quantities
F. Special Handling Notes
G. Signature

III. Placarding of Transport Trucks

IV. Coordination On Site

A. Contractor Environmental Department
B. Contractor Purchasing Section
C. Warehouse

Training Module #9 **Waste Analysis Plan**

I. Scope

A. Definitions

1. Regulated hazardous wastes
2. Non-regulated wastes with hazardous waste constituents

B. Wastes Covered - Regulated Hazardous Wastes

II. Generation Information

A. Physical Description
B. Specific Gravity
C. Ignitability
D. Composition
E. pH

III. Management Analyses

A. Fingerprint Analysis

1. Parameters

a. Physical description
b. Specific gravity
c. pH

2. Frequency checked

a. Container Storage Unit
b. Evaporation Tank unit
i. 55 gal/yr or more
ii. Other critical wastes

B. Evaporation Tank Unit Analysis

1. Parameters
2. Frequency

C. Additional Analyses Could be Requested or Required

D. Analytical Methods

1. Sources

a. EPA-SW-846
b. American Society of Testing Materials (ASTM)
c. WSTF laboratory job instruction

2. Methods must be accepted by regulatory agencies

E. Sampling

Introductory and Refresher Training

Each employee covered by the plan will receive training in those training modules relevant to his or her job responsibilities. New employees complete training within six months of their

6) Review, coordinate, and approve all operating procedures and work authorization documents issued by the WSTF Environmental Department

7) Be responsible for the submission of all permit applications as required by environmental regulations

8) Be responsible for providing interpretations of environmental laws and regulations

Minimum Training Requirements

Training modules #2, #3, #4, #8, and #9 (Table II-4-1) or a course (government or commercial) dealing with hazardous materials incident response.

Emergency Response Coordinator

Minimum Qualifications*

1) Education: four year degree from accredited college or university in science or engineering

2) Experience: one year minimum

Responsibilities

1) Act as an advisor on environmental matters to any WSTF individual authorized to manage emergency situations which could have adverse environmental impact; if no other site individual is acting in that capacity, the WSTF Emergency Response Coordinator shall act as the WSTF Manager's representative to control the emergency

2) Be responsible for insuring that environmental considerations are integrated into all WSTF emergency plans

3) Be responsible for developing a site capability to effectively deal with environmental emergencies at WSTF; this shall include, but not be limited to, stockpiling of equipment and materials, arranging for the use of existing site equipment, spill notification and response procedures, and training of personnel to respond to environmental emergencies

Minimum Training Requirements

Training modules #1, #2, #3, #4, #5, and #9 (Table II-4-1) or a course (government or commercial) dealing with hazardous materials incident response

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Environmental Department Manager(Support Contractor)

Minimum Qualifications*

1) Education: four year degree from an accredited college or university

2) Experience: three year minimum

Responsibilities

1) Provide interpretation, direction, and guidance to all WSTF organization elements on compliance with environmental laws and regulations

2) Review and evaluate all current and proposed activities for conformance with prescribed policy, standards, and procedures; recommend necessary actions to obtain compliance; conduct annual audits to insure WSTF compliances with all environmental regulations

Responsibilities

1) Perform duties as directed by WSTF contractor Environmental Department Manager

2) Assist WSTF contractor Environmental Department Manager in fulfilling responsibilities outlined in the above job description (See job description for the contractor Environmental Department Manager

Minimum Training Requirements

Training modules 1 through 9 (Table II-4-1) attendance at annual course or seminar which covers environmental compliance; hazardous material management or hazardous material incident response

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Environmental Training Coordinator

Minimum Qualifications*

1) Education: four year degree from an accredited college or university

(2) Experience: one year

Responsibilities

(1) Develop and implement an environmental training program for site personnel that complies with all environmental laws and regulations

2) Maintain office files to document environmental training program

Minimum Training Requirements

Attendance at annual course or seminar which covers environmental compliance, hazardous material incident response, or environmental training

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Hazardous Waste Handler

Minimum Qualifications*

1) Education: High school degree

2) Experience: one year minimum

Responsibilities

1) Transfer on site containers of wastes

2) Initiate contingency plan in the event of a spill

3) Sampling of hazardous wastes

Minimum Training Requirements

Training modules #1, #2, #3, #4, #5, #6 and #7 (Table II-4-1)

Hazardous Waste Shipment Coordinator

Minimum Qualifications

1) Education: High school degree

2) Experience: one year minimum

Responsibilities

1) Coordinate off-site shipments of hazardous waste

2) Assure analysis is accomplished for WSTF waste streams sent off-site for disposal and maintain

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PERMIT ATTACHMENT II-5
SPECIAL CONSIDERATIONS FOR THE CONSIDERATION OF INCOMPATIBLE, REACTIVE AND IGNITABLE WASTES

Introduction

All permitted units at the White Sands Test Facility handle hazardous wastes that may be ignitable, reactive or incompatible. The purpose of this plan is to explain how these wastes are handled at each unit and what precautions are used in order to prevent any danger to human health and the environment.

All permitted units are located at least 50 feet from the nearest property boundary line as required in Hazardous Waste Management Regulations, sixth version (HWMR-6), Part V. Locations are such that they are far enough away from other work areas and buildings to not affect or be affected by their closest neighbors) in the case of an emergency situation.

Air monitoring is conducted prior to admittance of authorized personnel to units that have potential for toxic or explosive gas releases. Monitoring is conducted with a portable gas detector, appropriate for the situation. Whenever unsafe conditions exist, authorized personnel will be restricted from the effected area until it is safe to enter. In the presence of toxic gases, self contained suits with supplied air will be worn.

Container Storage

The Container Storage Unit has been operating since the effective date of the permit.

Various building features, consideration for the appropriate types of container and their storage placement, and precautions have been planned to promote safe working and storage conditions.

Safety features have been built into the Unit. One is a low angle concrete ramp for ease of moving containers in and out of the building and at the same time serving to help maintain adequate containment for hazardous waste fluids which could be released to the interior floor. Another feature is adequate ventilation to evacuate volatile emissions which could potentially leak from containers, and for maintaining a safe operating temperature within the building during the warmer summer months. Explosion proof lighting and electrical wiring housed in metal conduit were designed to eliminate potential ignition sources, as was the placement the fire alarm and the telephone on the outside wall of the building. In the case of a fire, the building is equipped with two 20 pound and two 5 pound dry powder (ABC) fire extinguishers mounted inside the building at locations nearest access points. The fire alarm can be

activated directly outside the building, at the nearest occupied building, 150, or from several other adjacent buildings within the 100 Area.

Considerable attention has gone into the planning for the types and care of containers that will be used for storage and selection of appropriate storage placement within the storage building. Containers are made of, or lined with materials which will not react with their intended content. Hazardous wastes or materials that are incompatible will not be placed in the same containers nor will they be placed in unwashed containers that previously held an incompatible waste. Incompatible hazardous wastes will not be stored in the same container, and containers holding incompatible materials will not be stored on the same secondary containment pallet. Wastes which are incompatible will be stored on separate pallets and in separate areas of the building. Flammable or combustible materials will be stored away from doors when possible. Sources of sparks, flame or heat are prohibited within the building due to the potential to ignite flammable materials in storage. Equipment used to access or sample drums will be constructed of non-sparking materials. During loading and unloading operations, containers will be moved to and from transport vehicles outside the building with the aid of a special truck mounted tailgate lift or a motorized forklift. Inside the building, only non-motorized equipment will be allowed for the movement of containers. No smoking signs will be prominently displayed on all sides of the building's exterior.

Evaporation Tank Unit

Prior to receiving permit status, the Evaporation Tank Unit was in use under interim status. A great deal of knowledge has been learned through monitoring and trouble shooting the system over the past years. In an effort to provide safe conditions, several precautionary measures have already been implemented as a result of gained insight. New measures will develop as their need are discovered.

Smoking or the introduction of heat sources are prohibited within the fenced area around the tanks. No smoking signs are prominently displayed on all sides of the perimeter fence.

Waste compatibility is evaluated prior to admitting individual waste streams into the tanks. Knowledge of process, provided by each on site generator, is used to determine acceptability of the waste streams. Acceptance criteria is based on chemical composition, concentration, reactivity, pH, flashpoint, volatile organic concentration, density, solubility, physical description and generation process. Guidance documents used for compatibility assessment are as follows, but not limited to: 1) Chris Manual - Hazardous Chemical Data; 2) Dangerous Properties of Industrial Materials;

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for the
Contingency Plan

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Appendix 1 Floor Plan of Buildings Nearest Permitted Units Showing Locations of Fire Alarms, Electric Supply Pull Boxes and Fire Extinguishers

Appendix 2 Chemical Hazard Information

Introduction

Purpose

The purpose of this plan is to establish procedures, delineate responsibilities and provide planning guidance for the following:

a. The prevention and control of discharges of hazardous waste or hazardous waste constituents to air, soil or surface water;

b. Identification of resources to be used to clean-up discharges at WSTF (e.g. chemical absorbents, personal protective equipment);

c. The response activities to be conducted in the event of an emergency;

d. The protection of human health, property and the environment; and,

e. Reporting spills as required.

This plan will be implemented immediately in the event of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

Definitions

Emergency - A fire, explosion, or release of hazardous waste or hazardous waste constituents, which could threaten health, environment or property.

Environment - All surface waters, ground water, drinking water supply, land surfaces, below ground surfaces (geology) and ambient air.

First Responder - The first certified emergency response team member to arrive on site at an emergency.

Hazardous Materials (HAZMAT) Response Team - A team made up of on site personnel who have been trained in emergency response.

Incident Command System (ICS) - The command system based on a nationally recognized system for managing critical situations, which includes the following characteristics: (1) common organizational structure; (2) common terminology; (3) uniform and consistent procedures; and (4) coordinated communications.

Release - Any unplanned spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

a) Emergency Release

A release of a hazardous substance that occurs outside of WSTF controlled work areas, or within WSTF controlled work areas, goes beyond the scope of the local area emergency procedures, controls, or resources.

b) Incidental Release

A release of a substance that can be handled within the scope of the local area emergency procedures, controls, and resources.

Reporting Spill - Any release (other than those acceptable to regulatory agencies) into the environment of a listed hazardous substance in quantities greater than or equal to the listed quantities found in 40 CFR 302 (refers to the National Emergency Response Center, the NM State Police and the NMED), any release of hazardous waste which could threaten human health or the environment, or any release of hazardous waste from a permitted unit.

Operations

Response to the release of a hazardous substance at WSTF will be as follows:

a. The local area or worksite will exercise their emergency procedures which identifies the responsible person in charge.

b. The responsible person in charge will assess the situation, and, if it is an incidental release, will perform control and cleanup with appropriately trained personnel equipped with appropriate personnel protective equipment.

c. If the incident is beyond the control of local personnel and resources, then the HAZMAT response team will be called.

d. A formal handover of command from the local area person in charge to the Incident Commander must take place before the Incident Command System defined in this document is exercised.

e. The local area person in charge becomes an advisor to the Incident Commander.

The following will be implemented in the event of an emergency release or spill of any hazardous substance (HAZMAT response), in the following phases:

a. Phase I, Initial Response: Identification and containment of hazardous substance releases. Includes the following actions to save lives, reduce injuries, and protect the environment: evacuation of nonessential personnel; cordoning off the danger area; performing fire and rescue operations; stopping the release if possible; preventing the spread of the released material into the environment.

b. Phase II, Recovery of Released Hazardous Substances: In this phase, cleanup operations and recovery of the spilled substance and materials contaminated by the release is performed.

c. Phase III, Short-and-Long-Term Site Restoration (Post-Emergency): The removal of contaminated soil, site restoration to permit personnel to resume normal activities, and to prevent further contamination of the environment.

The WSTF HAZMAT Response Team will consist of all WSTF Fire Department professionals and selected personnel from the operational areas, trained to the HAZMAT Technician level. The WSTF Fire Department is responsible for the HAZMAT Response Team training and equipment. They will perform phase I and phase II activities. WSTF's HAZMAT response coverage is provided full-time, 24 hours a day.

Within the WSTF hazardous test areas, supervisors are responsible for writing plans for the initial phase I emergency response actions to safe the test systems, alert personnel, and evacuate of personnel to safe places of refuge. The HAZMAT Response Team will be called in when it is determined by the local area person in charge that the condition constitutes an emergency. Incidental spills will be handled and controlled by appropriately trained personnel within the area.

In addition to phase I and phase II activities, the NASA Environmental Program Manager and the contractor Environmental Department are responsible for approval and oversight of phase III remediation activities. Operational area personnel will assist in the cleanup operations.

Responsibilities

All persons appearing on the list of emergency coordinators (Table II-6-1) are persons with a minimum of one year experience

in the areas for which they are involved. They have the authority to commit necessary resources in the event of an emergency. Their responsibilities are described below.

a. The WSTF Manager will approve the selection of an Emergency Response Coordinator and provide necessary resources to maintain a competent emergency response capability in accordance with 29 CFR Part 1910.120.

b. NASA Office Chiefs are responsible for providing appropriate personnel to be trained in emergency response roles and comprise the HAZMAT Response Team; assuring that personnel under their jurisdiction are appropriately trained in the hazards associated with their operations; assuring that emergency procedures are established for local area employees to perform emergency shutdown, evacuation and other initial control functions.

c. The Emergency Response Coordinator (ERC) has overall responsibility for the WSTF emergency response program defined in this Plan; approves equipment purchases for HAZMAT response; performs critique of mock exercises and emergency responses, and reports findings to the NASA WSTF Safety Officer; reviews, with the contractor safety department, the emergency response plan on an annual basis for adequacy; develops a schedule for subsequent procedural changes to the plan in consultation from the NASA and contractor safety departments; and develops budget requirements for emergency response in conjunction with the contractor safety department.

d. The NASA Environmental Program Manager (EPM) assures proper reporting of hazardous substance releases; assists the Emergency Response coordinator in critique of emergency responses; approves of post-emergency cleanup and decontamination activities; provides oversight of the contractor Environmental Department; reports releases of hazardous substances in compliance with EPA, OSHA, and New Mexico Environment Department reporting requirements.

e. The Contractor Environmental Department will provide a personnel to serve as advisor to the Incident Commander during emergency response incidents; advises Warehouse personnel when requested for hazardous substance replaces in the warehouse; supervises post-emergency (phase III) spill cleanup activities.

f. The NASA Safety Office will review the results of all HAZMAT responses and mock exercises; act as an advisor to Incident Commander during emergency incidents; and assists the contractor safety department in determination of PPE and emergency response equipment.

g. The WSTF Industrial Hygienist acts as a consultant to the Emergency Response Coordinator for all OSHA-related issues; acts as an advisor to the Incident Commander during emergency response activities; assists the NASA WSTF Safety Officer in determination of appropriate PPE and emergency response equipment; and acts as an advisor to the contractor Environmental Department during cleanup operations.

h. The Contractor Program Assurance Department serves as the central point-of-contact for HAZMAT response (WSTF Emergency Center); maintains the budget for training, equipment, and supplies needed for HAZMAT operations; coordinates and approves training activities; maintains and provides emergency medial and firefighting capability for WSTF; will approve, along with the NASA Emergency Response Coordinator, proper PPE and emergency response equipment; and assists the Emergency Response Coordinator in determining corrective actions and procedural changes to prevent spill recurrence and improve emergency response.

i. The WSTF Fire Chief serves as one of the Incident Commanders during HAZMAT responses; is responsible for maintaining emergency response equipment; and acts within the ICS during emergency response events.

j. The WSTF Ordnance Officer will serve as an advisor to the Incident Commander for any incident involving ordnance.

k. Area Supervisors are responsible for training personnel in local area hazards, emergency procedures and incidental spill cleanup; training personnel in completion of spills reports; reviewing area procedures for adequacy in the event of an emergency release; and assists the Incident Commander, where possible, during HAZMAT responses in their areas.

l. Security Guards will assist in traffic control and deny entry of vehicles into evacuation zones and may also assist in evacuation when requested.

m. Public Affairs Officer will be the point-of-contact for any off-site news bulletins concerning hazardous releases. The news releases must have the approval of the WSTF Manager before release.

n. Fire Wardens are assigned to all occupied buildings at WSTF. During fires and other emergencies, Fire Wardens assist in safely evacuating employees from buildings and directing them to safe refuge areas.

o. Auxiliary Firefighters have been trained to support the fire department during major emergencies. Under fire department supervision, the auxiliary firefighters are responsible for both fire and basic medical support.

p. Incident Commanders have ultimate authority and command during emergency responses. They are responsible for coordination of activities during emergency responses. They have the authority to commit the necessary site resources, including equipment and manpower, to mitigate the emergency situation. Following emergency events, Incident Commanders report to the Emergency Response Coordinator.

q. Hazardous Materials (HAZMAT) Response Team is responsible for responding to releases or potential releases of hazardous substances in order to favorably change the outcome of the release. They have the training necessary to perform offensive actions: approaching the point-of-release in order to plug, patch, or otherwise stop the release.

Table II-6-1 Emergency Response Coordinators List				
Emergency Response Coordinator (ERC)				
	NAME	WORK NO.	HOME NO.	PAGER NO.
Primary	R. Reynaud	524-5281	382-5606	5281
Alternate	S. Carr	524-5216	522-8267	5217
Environmental Program Manager (EPM)				
	NAME	WORK NO.	HOME NO.	PAGER NO.
Primary	D. Amidei	524-5517	523-4495	None
Alternate	P. Pache	524-5462	382-8643	5462

Incident Commander			
NAME	WORK NO.	HOME NO.	PAGER NO.
S. Carr	524-5216	524-8267	5217
D. Amidei	524-5517	523-4495	None
C. Mabry	524-5641	524-4425	offsite 1-800-539-5512
D. Aranda	524-5641	524-4432	None
B. Beaher	524-5641	521-1087	None

Personnel Roles and Lines of Authority: An Incident Command System (ICS) will be employed by WSTF for responses to emergency releases of hazardous substances. The system will consist of:

a. First responders (Levels I and II) who respond to emergency releases in a defensive fashion and activate the emergency response sequence;

b. HAZMAT technicians and specialists (Levels III and IV) who act to stop and mitigate the emergency release; and

c. Incident commanders (Level V), who will assume control of the incident scene.

There are two levels of first responder: Level I, awareness level and Level II, operations level. The first responder at the awareness level is trained to recognize a hazardous substance release and to initiate an emergency response sequence by notification of the proper authorities. The first responder at the operations level (Level II) is trained to respond to a release in a defensive fashion without actually trying to stop the release.

a. Hazardous materials technicians (Level III) are trained to aggressively stop the release or potential release of hazardous substances. They contain, control and confine the release using the resources and protective equipment available. Hazardous materials specialists (Level IV) respond with and support hazardous materials technicians. They receive the same training as HAZMAT technicians, but have duties that require a more specific knowledge of the substances they may be called upon to contain.

b. Incident commanders (Level V) are trained to assume control of the incident scene and implement the ICS. They are given the authority to request any resources necessary to mitigate the hazardous release incident.

During a HAZMAT response, the senior Emergency Response Official (with respect to the OSHA training levels defined above) at the scene takes control of the incident. If the senior official deems the current response adequate, the cognizant on-scene official may continue command activities. Personnel give command of the incident have the authority to take all necessary actions to stop or lessen harm to personnel, property and the environment. The ICS structure is designed so that the Incident Commander communicates with as few personnel as practical so he does not get overloaded with information. Supporting the Incident Commander is a command staff, and the logistics, planning and operations sections. The command staff as shown includes the Safety Official, Industrial Hygienists, and the Area Supervisor-in-Charge. It may or may not include all those officials in an emergency incident; only those necessary to support the Incident Commander. The Incident Commander, at his discretion, may designate personnel on the command staff to liasion or logistics functions.

The operations section is the hand-on portion of the WSTF ICS. It consists of the fire department and medical; portion, the HAZMAT response portion, and the test area systems operators portion. The fire department and medical portion at WSTF is contained within the emergency center. The test area systems operator part may include panel operators, test conductors, mechanical and electrical technicians, and other personnel who have particular knowledge of test systems, facilities or equipment involved in an emergency incident.

Training

Employees assigned to the personnel roles described above will receive training in accordance with 29 CFR Part 1910.120(q)(6). Training records will be maintained in the site support contractor training and certification plan. Refresher training in accordance with 29 CFR 1910.120(q) will be required annually for these certifications.

Contingency Plan Distribution

The Contingency Plan will be distributed as follows. Any changes to the original will be followed up with a change notice or revised copy to all Contingency Plan holders.

Distribution and locations of the Contingency Plan is as follows:

WSTF Site Copies:

Original Copy - NASA WSTF Manager's Office
WSTF Environmental Emergency Coordinator
On site Contractor's Environmental Department
Fire Department
200 Area Office Chief
300 Area Blockhouse
400 Area Blockhouse

800 Area Control Room

Off-site Copies:

White Sands Missile Range, White Sands, NM
Memorial General Hospital, Las Cruces, NM
Dona Ana Sheriff's Department, Las Cruces, NM
New Mexico State Police, Hazardous Material Emergency Response Division, Santa Fe

In the Part B RCRA Application and RCRA Permit:

New Mexico Environment Department, Hazardous and Radioactive Materials Bureau, Santa Fe, NM
United States Environmental Protection Agency, Region VI, Dallas

Amendment of Plan

It is the responsibility of the ERC to review the Contingency Plan and amend, if necessary, whenever:

a) The facility permit is modified;

b) The plan fails during a test run or in an emergency;

c) The facility design, construction, operation, maintenance or other circumstances change to increase the potential for fires, explosions, or release of hazardous waste or hazardous waste constituents or changes in the response necessary in an emergency;

d) The list of emergency coordinators changes; or
e) The list of emergency equipment changes.

A request for a permit modification must be sent to NMED and EPA concurrently with the change. Whenever the plan is changed, all parties identified on the Contingency Plan distribution listed above will also receive copies of the changes.

Preparedness and Prevention

Internal Communications and Alarm Equipment (264.32(a))

All inhabited buildings at WSTF are equipped with telephone communication and fire alarm systems. Pull box alarms are available and accessible in buildings near the hazardous waste management units (Figures II-6-1 and II-6-2). Pull box alarm locations, for those buildings located nearest the hazardous waste units, are indicated in Appendix 1. In the case of an emergency, facility personnel will be notified through public address system announcements, siren wails or fire bells.

External Communications and Alarm Equipment (264.32(b))

Any site telephone may be used to summon emergency assistance from WSTF security, fire and emergency response teams. The Emergency Center, in addition to telephones, maintains a radio system which is capable to summoning assistance.

When a pull box alarm is used, an alarm signal is sent to the Emergency Center in Building 104. If the emergency involves a fire or potential fire, and off-site assistance is required, it can then be summoned by telephone.

Telephone communication is provided by U.S. West. Telephones are located at the 100 Area Container Storage Unit, at the 200 Area Evaporation Tank Unit (evaporation tanks), at the 500 Area Waste Fuel Treatment Unitand in all occupied buildings. The Emergency Center is immediately alerted by either lifting the receiver or by dialing 5111, depending on the type of phone.

Additional communications are provided by the use of hand-held and mobile two-way radios. In addition to the extensive telephone network available for internal and external communications, WSTF maintains 4 dedicated radio frequencies. The security personnel, the Emergency Services Center, Fire Department and personnel operation at the 700 Area Open Detonation Unit are all equipped with hand-held or mobile radios which can be utilized in the event of an emergency.

Fire Control Equipment and Procedures (264.32(c))

WSTF fire protection is provided by the use of fire hydrants, fire extinguishers, hose racks, and an on site Fire Department. Fire hydrants and water supply risers are located 700 feet south of the Container Storage Unit; there is another one adjacent to the Evaporation Tanks Unit (evaporation tanks); and one at the Waste Fuel Treatment Unit. The Container Storage Unit is located one half mile north of the WSTF Fire Department and is equipped

with fire extinguishers and a communication system that can be used to notify the appropriate personnel in the case of an emergency. All fire hydrants and fire protection water risers are inspected semiannually by the WSTF Fire Department for static pressure, flow pressure and water flow.

The WSTF Fire Department can respond with three fire trucks/pumpers in the event of an emergency. Each pumper truck carries from 400 to 750 gallons of water and has an operating pressure of 150 psi. Two of the trucks pump at a rate of 1000 gallons per minute and are capable of operating two 2 1/2-inch fire hoses. The other truck delivers 750 gallons per minute and can operate five 2 1/2-inch fire hoses. Each vehicle's operational status is checked daily and preventive maintenance is conducted on a weekly basis. Additionally, each pumper is back-flushed semi-monthly.

Portable fire extinguishers are present throughout WSTF. Fire extinguisher locations and types, for buildings near the hazardous waste units, are found in Appendix 1.

Fire control vehicles have an unobstructed path to all hazardous waste management areas and emergency procedures restrict access to authorized vehicles and personnel.

Spill Control and Equipment (264.32(c))

The WSTF contingency plan employs a hazardous materials (HAZMAT) response team that responds immediately to emergencies. The team is made up of professionals with experience in supervision, heavy equipment operations, fire fighting, safety engineering, contamination control, and environmental protection. This team is equipped with a portable source of self-contained breathing air, protective suits, commercial adsorbents, neutralization solutions, and assorted hand tools and containers. In the event of a spill or release at WSTF, the containment activities outlined the section on "Containment Activities" will be implemented.

A wide variety of the WSTF heavy equipment can be utilized for containment and clean-up in the event of a hazardous waste spill. In the event of a large spill, a bulldozer, backhoe and frontend loader are available for spill control.

Temporary storage tanks, portable pumps and hoses can be used to transfer and provide temporary storage for spill materials.

Absorbents and temporary construction materials, such as soil, sand and gravel, are readily available at WSTF. Other materials such as emulsifiers, specialty adsorbents, and containers can be obtained immediately from a central on site spill response stockpile. WSTF also maintains numerous hand tools, such as shovels and rakes, which can be utilized in the event of an

emergency. There is also a wide variety of protective clothing with breathing apparatus for personnel who may become engaged in spill control and clean-up operations. See Table II-6-2 for a complete list of spill control equipment.

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Fire Extinguishing/Rescue:		**Location: Building 104**
1 Fire Truck/Pumper	Darley Class A Pumper	1000 GPM, 500 gal. storage tank, firefighter equipped
1 Fire Truck/Pumper	All-wheel drive Darley Class A Pumper	1000 GPM, 750 gal. storage tank, firefighter equipped
1 Fire Truck/pumper	Military Class A Pumper	750 GPM, 400 gal storage tank, firefighter equipped
1 Ambulance	GSA Chevy Van 30 Type 2	Fully equipped - EMT manned
1 Ambulance	GSA Ford Econoline Type 2	Fully equipped - EMT manned
Transport Vehicle	Ford w/enclosed box	Transport men and materials
3 Fire Suits	FireKing	Heat resistant
2 Harness	Confined Space	Entry/rescue
Polyurethane Foam	AFFF Alcohol Type	Alcohol fire suppression
Spill Control (Spill Response Trailer Unit)		**Location: Building 104**
Pick up Truck	3/4 Ton	Hitch equipped for towing trailer and transport of equipment.
Spill Response Trailer	Enclosed 12'x 6'10" x 6' tandem-axle	Response equipment transport
1 Generator	7000 Watts, 120/240 Volts, electric start	Illumination during night-time operations
1 Gas Detection Monitor	Toxic, combustible, O_2, H_2S gas detector	Monitor confined spaces, toxic atmospheres, and deconned PPE
4 Portable Lights	Quartz w/wire lens guard	500 Watt illumination
4 Personal Protective Suits	Level "A"	Used for max. protection

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
4 Personal Protective Suits	Level "B"	Level "A" equal except skin
4 SCBA breathing air bottles	4500 psi	45 min/1 hr air supply
12 Thermal Vests	Pocketed for cold packs	Heat stress protection
1 Pump	¼ HP explosion proof electric motor	Flammables transfers
Plug/Patch/Repair		
-2 Non-sparking Tool Kit	Hand tools coated w/ non-sparking material	Drum/container patching and contamination containment
-1 Drum Patch Kit	Screws/plugs/stoppers	"
-1 Pipe Patch Kit	Neoprene lined clamps w/wrenches	" (Liners available for compatibility)
-1 Tank Repair Kit	Patches, adjustable chains/straps	"
-1 Box Pipe Wrap	Chemical resistant patching material	"
-2 Boxes Response Stik	Chemical resistant patching material	"
-4 Bung Wrenches	Non-sparking	Leak/contamination control
-1 Tool Kit	Hand tools, plugs and patching material	Designed for compatibility w/site chemicals
1 Drum Deheader	Forged steel w/steel blade	Contamination containment and removal
1 Vacuum Cleaner	Stainless steel, wet/dry	15 gallon w/filters
1 Bucket	Stainless steel 3 gal.	Chemical compatibility w/site wastes
1 Bucket	Plastic w/top 5 gal.	Chemical compatibility w/site wastes
1 Shovel	Plastic	Flammable waste collection

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
1 Mop w/4 Mop heads	Chemical sponge	Spill absorption
2 Pink Absorbent Socks	10′ long by 8" diameter	Caustics, acids and solvents
12 Pink Absorbent Socks	46" long by 3" diameter	Caustics, acids and solvents
8 Blue Absorbent Socks	46′ long by 3" diameter	Caustics, acids and solvents
50 lbs. Clay Absorbent	Clay spill dry	Liquids and petroleum products
200 Blue Paper Towels	12" X 12"	Spill absorption and clean up
2 Pair Binoculars	10 X 50 Power	Remote spill response determination
5 Flashlights	Hazardous atmospheres	Illumination
10 Safety Vests	Fluorescent orange	Response Team ID.
10 Safety Cones	Restricting area labeled	Spill Area ID
2 Signs	Red on white free standing	Spill warning
2 Face Shields	Chemical Resistant	Corrosive and splash protection
2 Aprons	"	Level "C" protection
3 Pair Safety Glasses	"	Level "C" protection
10 Pair Gloves	Plastic	Chemical resistant
20 Pair Boots	Hazmat	Chemical Resistant Steel Toe/Midsole
12 Pair Boots	Tyvek	Chemical resistant
1 Coveralls	Polylaminated Tyvek	Chemical resistant
5 Coveralls	Tyvek	Chemical resistant
1 Drum Truck	Self-standing w/polyolefin wheels	30/55/85 gal drum transport

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Spill Control Heavy Equipment		**Location: 150 Yard or Landfill**
Vacuum Trailer	Gasoline powered - 1000 gal. capacity	Spill containment/transfer
Pickup	4x4 3/4 Ton	Equipped to pull vacuum trailer
Bulldozer	D8L Catepiller	Diversion, dyking and erosion control
Landfill Compactor	816 Catepiller	Diversion, dyking and erosion control
Front Loader	4.5 Cu Yd International	Earth movement
Crane	Mobile 10-ton	Equipment and container movement
Crane	Mobile 30-ton	Equipment and container movement
Backhoe	Case w/2 cu. yd. bucket	Diversion, dyking and erosion control
2 Dump Trucks	6 and 12 cu. yd. beds	Earth movement
Semi-Truck	International Diesel	Transfer trailers and equipment
Low-boy Trailer	20 tons	Transfer containers and equipment
Tanker Trailer	Stainless steel 6000 gal.	Spill containment and transfer
Forklifts (all work areas)	Various sizes	Equipment and container transfer
Livestock Storage Tanks	1000 gallons	Spill containment
Portable Pump	4" Wheel mounted 100 GPM	Waste transfers
Decon Equipment		**Location: Building 104**
1 Decon Station	3 Station poly-lined boxes w/decon shower	Easily assembled and portable
1 Open Top Container	Poly w/lid	PPE collection for decon
4 Brushes	Long handled/soft	PPE decon
Firehose w/Connections	Length 200′ Diameter 2"	Perimeter for decon station
Garden Hose w/Connections	200" Diameter 5/8"	Decon shower water supply

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Plastic Sheeting	Polyethylene	Decon station containment
Neutralizing solutions	Clorox/Caustic	Decon Fuel and Ox contamination
Soil, Sand and Gravel	Naturally occurring	Diversion, dyking and erosion control
Additional Emergency Response Equipment/Supplies Available. Located in Warehouse and Related Work Areas		
Hard Hats	Polyethylene	Required in "Level A" suits
Safety Glasses	Assorted	
Goggles	Chemical resistant	Mild acids and caustics protection
Face Shields	Chemical resistant	Corrosive and splash protection
Splash Suits	PVC chemical resistant	Level "B" protection
Totally Encapsulated Suits w/airlines	ILC Dover	Airline - positive pressure, hydrazine/s and oxidizer compatible
SCBA's	MSA	30 min breathing air supply
2 Breathing air trailers	Regulated/manifolded K-bottles	Long term breathing air source
Chemical Cartridges	Assorted	Selected per PPE level and contaminant
Respirators	Airline and 1/2 mask	Selected per PPE level and contaminant
Gloves	Assorted - neoprene, butyl, Silver Shield	For compatibility w/various site known chemicals
Spill Pillows	Assorted	Spill absorption
Clay Absorbent	15-25, 50 lb. bags	Spill absorption
Shovels		
Rakes		

Table II-6-2, EMERGENCY RESPONSE EQUIPMENT		
Equipment	**Description**	**Capabilities**
Rope and Line		
Drums	30/55 gal.	Spill containment
Salvage Drums	85 gal.	Overpacking and decon
Drum Hoist	Hydraulic boom, Perfect Tinning Corporation	Drum transfers and overpacking
2 Drum Slings	Cable - proofed to 500 and 1000 lbs.	Drum transfers and overpacking
Hand Pumps	Chemical resistant	Spill transfers

Decontamination of Equipment

If a spill should occur, all contaminated equipment will be decontaminated as a latter part of the response process. WSTF is equipped with a cleaning unit for decontamination. Post-

emergency equipment will be serviced in the "clean room" or in the LABCON Highbay by the on site cleaning personnel. Decontamination will be accomplished with the use of biodegradable soap, hot water and steam. The resulting waste is expected to be of such a dilute nature that no incompatible reactions will occur. Typically these wastes will be transported and added to the evaporation tanks. Determination for the completeness of decontamination will be based on physical and chemical analysis of the particular contaminants.

Water Supply

Site water is provided by two drinking water wells. The water is pumped to fill a 1,000,000-gallon gravity storage tank by two 100 horsepower electric motors. The pumps lift the water 1,038 feet, from the water table to the tank, a distance of over 7 miles. The storage tank, located northeast of the main facility development, is monitored remotely by electronic gauges from the Emergency Center. Physically inspections are conducted at tank by security personnel a minimum of six times a day. Adequate volume and pressure will be maintained to efficiently operate all water supplied fire fighting equipment.

Arrangements with Local Authorities

WSTF has agreements with several outside agencies for support in the event of an emergency. In all cases, the support activities involve materials, personnel and equipment which will be released to the WSTF Emergency Coordinator for use at his discretion. These groups have been provided with a copy of this plan in order to familiarize them with the layout and possible hazards at WSTF. Details of these agreements can be found in the Permit Application, Part B.

AGREEMENTS

Dona Ana County Sheriff - Has been provided with a copy of this plan in order to familiarize them with the layout, and possible hazards at WSTF.

U.S. Army White Sands Missile Range - WSTF is on WSMR and therefore is addressed in the WSMR contingency plan. WSMR is capable of providing fire fighting, spill clean-up, and evacuation support. NASA also has an agreement with McAffee Medical Center on WSMR to provide medical assistance.

Memorial Medical Center - Has been made aware of the types of medical emergencies which could result at this site.

State of New Mexico - The State does not enter into agreements with individual facilities, but does have a mandated duty to assist when notified. The State has been provided with a copy of

this plan in order to familiarize them with the layout and possible hazards at WSTF.

Emergency Procedures

General

WSTF emergencies will be reported to the Emergency Center switchboard which is manned 24 hours a day. The initial notification may be automatic, such as fire alarms or manual by telephone (Emergency Center, dial 5911 or 5111) or radio. Site tours by firemen every 90 minutes during off-duty hours assists in notification. In the event of an emergency situation during working hours there are personnel in all areas who are trained and authorized to act as first responders. The Emergency Center will still be notified and the rest of the chain of events followed even if a first responder is on scene at the time of the emergency.

The switchboard operator at the Emergency Center will concurrently: dispatch the Fire Department; notify the area specific EC for the area in which the emergency is located; and notify the EEC.

The Fire Department will act as the first responder when they arrive on scene.

The First Responder will obtain technical information about hazards (Appendix 2: Contains information on the chemical hazards of the most widely used chemicals on site), perform search and rescue as required, identify vapor clouds, establish the command post, set up road blocks, and evaluate and implement initial Containment Activities procedures and the Evacuation Plan procedures as needed.

The Emergency Center will relay the information on the type of emergency to the IC and the EPM. The IC will proceed to the scene of the emergency and evaluate the situation. The IC will determine actions to be taken in response to the emergency. The IC will maintain contact with the EPM during all stages of the emergency.

EMERGENCY PHONE NUMBERS

White Sands Missile Range	(505)	678-4187
Memorial Medical Center	(505)	522-8641
NMED Emergency Response	(505)	827-9329

NOTIFICATION

National Response Center (Spills and Releases)	(800) 424-8802
State of New Mexico	(505) 827-9329

CHEMICAL INFORMATION

Chemtrec (Chemical Manufacturer's Association - Washington, D.C.)	(800) 424-9300

The IC will immediately identify the character, amounts, source, and real extent of any released material. This initial assessment will be based on documentation of materials routinely managed in each area and existing physical and chemical analyses (Permit Attachment II-1, Waste Analysis Plan). The IC will advise the ERC of his findings.

The IC, as assisted and/or advised by the EPM, will also assess any direct or indirect hazards to human health and the environment which may result from any release due to the emergency situation. The assessment will consider such pertinent factors as Threshold Limit Values (TLV's) of chemical constituents, potential combustion by-products, potential incompatibilities and adverse reactions, and the necessity for providing adequate run-off control for both released materials and agents used in fire control, containment or decontamination efforts.

Based on this evaluation, the IC will activate internal alarms as needed and request assistance as outlined in the coordinated emergency response (Permit Attachment II-4, Training Plan). The EPM will notify authorities as outlined in the section on Record Keeping and Incident Report procedures if the incident involves a reportable release. The IC, as assisted and advised by the EPM, will assess the situation and decide on the materials and manpower required to respond to immediate threats to human health and the environment. The IC will then notify the members of the Emergency Response Team and designate an incident command post from which the operations will be coordinated.

The IC will take whatever actions necessary to protect human health and the environment during the emergency. This may include shutdown of operations and commitment of resources and manpower. If operation systems are shut down, the ICis responsible to see that monitoring for leaks, pressure buildup, gas generation, or rupture in valves, pipes or other equipment, wherever appropriate, is accomplished.

As soon as the immediate threat to health has been brought under control, the IC will relinquish control of the clean-up effort to the EPM who will oversee the clean up of the on site contractor.

Releases From Permitted Hazardous Waste Units

This section outlines some specific considerations for the units which handle hazardous waste.

Evaporation Tanks (264.56(e), 264.194(c))

The 200 Area hazardous waste evaporation tanks at WSTF provide for leak detection and secondary containment. In the event of a double failure or handling accident, the EPM will make an initial assessment of fire, explosive, toxicity hazards, and potential threat to human health and the environment. The Contingency Plan will then be implemented as necessary and as outlined in the first part of the Emergency Procedures section. In the event a release from a tank is suspected or documented, the EPM will be immediately notified and insure that the process flow to the tank is shut-off and the waste diverted to the stand-by tank. Because both tanks have independent leak detection systems, a leak in one tank will not preclude the use of the other independent tank. Notifications will be made as outlined in the section of this plan on Record Keeping and Incident Reports.

After the initial assessment has been made, any free-standing liquid will be contained with berms to prevent any further migration and to contain any additional releases which may occur until the tank is repaired and the remaining waste is removed. Any free-standing liquid and any hazardous waste residue which remains in the tank will then be removed and placed in another tank or container and transported off-site to a permitted disposal facility. A soil assessment and clean up-will be performed as outlined in the Soil Assessment and Clean-Up Procedures portion of the plan.

During the decontamination operation, the tanks will be inspected to determine the cause of the hazardous waste leak. If the leak cannot be repaired or the tank's integrity is so impaired that it is no longer usable, the tank will be decontaminated using appropriate decontamination solutions, removed from service and the Closure Plan implemented. If the leak is repaired, the tank will be leak tested prior to returning to service.

If the tank cannot be successfully decontaminated it will be removed from its location and transported off-site for disposal at a permitted disposal facility.

Hazardous Waste Drain Lines and Drain Line Sump (264.15(c), 264.56(e))

Releases of hazardous waste would be identified during routine inspections of the drain line, drain line sump and the associated secondary containment systems. Other areas indicative of potential leaks may be where there is subsidence, damp earth surrounding equipment, or noticeable surface spills. The EPM will be notified immediately and the drain line flow will be shut down. This will be accomplished with the use of an announcement over the public address system saying that the hazardous waste drain is closed to additions and the placement of signs on all drains directing personnel that the drains are closed. During the time the drain lines are closed, the waste will be held in the individual shops until the system is reopened. Notifications will be made as outlined in the Report Keeping and Incident Report section described in the latter part of this plan.

The EPM will then make an initial assessment of fire, explosive, toxicity hazards and potential threat to human health and the environment. The Contingency Plan will then be implemented as needed. Upon completion of the initial assessment, any liquid or wastes remaining in the drain line or drain line sump will be drained into tanks or containers, or taken to the evaporation tanks.

If it is suspected that a release has resulted in soil contamination, measures will be implemented as outlined in the Soil Assessment and Clean-Up Procedure portion of the plan.

The drain lines and the drainline sump will be inspected to determine the cause of the hazardous waste leak. If the leak cannot be repaired or the equipment integrity is so impaired that it is no longer usable, the equipment will be decontaminated by triple rinsing. The rinsate produced in the decontamination procedure will be handled as hazardous waste and disposed of accordingly. In the event the leak is repaired, the line will be leak tested prior to being put back in service.

If the drain line(s) and the drain line sump cannot be successfully decontaminated, defective components will be removed from their location and disposed of off-site at a permitted disposal location.

Container Storage Unit (264.15(c), 264-56(e), 264.171)

Noticeable spills or free-standing liquids inside the Container Unit may be indicative of release of hazardous waste. If a release is suspected or documented, the Emergency Center will be notified immediately. The Center will in turn notify the EPM. Notifications will be made as outlined in the plan section, Record Keeping and Incident Reports.

Initial assessment of the fire, explosive, toxicity hazards, and the potential threat to human health or the environment will be made by the EPM as described in the General portion of the plan. Subsequent to the initial assessment, any spills will be cleaned up and packaged for disposal at an permitted off-site RCRA facility.

Subsequent assessment will be made to determine if any contamination has escaped from the containment system. If contamination is confirmed, the soils will be excavated to remove all contamination by measures outlined in the plan section, Soil Assessment and Clean-Up Procedures. Contaminated soils will be disposed of at an off-site permitted disposal location.

Drums in the storage area will be inspected for deterioration, leakage or improperly secured closure devices. Any drums that are deteriorated or that cannot be sealed will have the contents removed and repackaged in serviceable drums. Unserviceable drums will be removed from service, cleaned in accordance with the Decontamination Procedures or disposed of off-site at a permitted disposal location if they cannot be decontaminated.

Open Detonation Unit (264.56(e), 264.171)

Any release of hazardous waste from the Open Detonation Unit (ODU) would be indicated by elevated explosive residual organics and total metals in the soil as a result of inefficient treatment (refer to the Permit Attachment II-1, Waste Analysis). If elevated hazardous wastes are detected in the soil, a soil assessment and clean-up will be performed as noted in the Soil Assessment and Clean-Up Procedures portion of the plan.

In the event of a fire involving explosives, all personnel and equipment will be evacuated to a position no closer than the entrance to the Sanitary Landfill (refer to Figure II-6-2). The fire will be observed from this position until it burns out or undergoes a transition from deflagration to detonation. A waiting period of 24 hours will be observed before explosive personnel can approach the OD Unit and assess the situation. Soils around the OD Unit, which show indications of contamination from the burning of explosives, will be managed in accordance with Soil Assessment and Clean-Up Procedures. The soil will then be analyzed for explosive residual organics and total metals as discussed in Permit Attachment II-1, Waste Analysis. Any soils exhibiting concentrations in excess of the established background will be disposed in accordance with HWMR-6.

In the event there are other emergency situation not involving fire, all unnecessary personnel will be evacuated from the OD Unit. Only the qualified personnel needed to handle the emergency and take corrective measures will remain at the site.

Waste Fuel Treatment Unit (264.56(e), 264.171)

A release of hazardous waste from the waste fuel treatment unit would be identified during routine inspections of the unit's tanks, piping and secondary containment. In the event a release from the treatment facility is suspected or documented, the ERC will be notified immediately and all process equipment turned off.

The EPM will then make an initial assessment of fire, explosive, toxicity hazards, and potential threat to human health and the environment as previously described. The necessary measures will then be implemented as outlined in the Emergency Procedures portion of the plan. Upon completion of the initial assessment, the waste fuel in the treatment and holding tanks will be secured by closing the tank outlet valves and if required, by transferring the waste to a tanker trailer. Any waste remaining in ancillary equipment will be drained to tanks or containers.

A subsequent assessment will be made to determine if any contamination has escaped from the containment system. If contamination is confirmed, the soils will be excavated until all contamination is removed. The extent of contamination will be assessed as outlined the Soil Assessment and Clean-Up Procedures of the plan, and to background or risk assessment levels.

The tanks and ancillary equipment will be inspected to determine the cause of the leak. If the leak cannot be repaired or the equipment integrity is so impaired that is no longer usable, the equipment will be decontaminated by triple rinsing. The rinsate produced in the decontamination procedure will be handled as a hazardous waste and disposed of accordingly. In the event the leak is repaired, the tanks or ancillary equipment will be leak tested prior to being put back in service. All waste fuel removed from the tanks and ancillary equipment will be treated and disposed of in accordance with HWMR-6.

Tanks or equipment that can not be successfully decontaminated will be removed from their location and disposed of off-site at a permitted disposal location.

Soil Assessment and Clean-Up Procedures

After a spill has been contained and all free liquid has been removed, the EPM will conduct an assessment of the contaminated soils. This assessment will include the identity of the waste streams associated with the Unit that released the contamination. This will allow the IC to determine the safety precautions that will be utilized by clean-up personnel and determine what analytical methods are appropriate for determining the extent of contamination.

Using portable monitoring instrumentation and visual observations, the soils that appear to be contaminated will be excavated. All excavated soils will be properly containerized, characterized and disposed of in compliance with HWMR-6.

After all soils that appear to be contaminated are removed from the area, a sampling grid will be developed based on the size and quantity of the spill to determine the extent of horizontal and vertical contamination. Core samples will be taken and analyzed from different locations and depths within and adjacent to the spill area. Analytical parameters will be based on the knowledge of the waste stream.

Based on the analytical results, and background or risk assessment levels, the EPM will determine if the initial cleanup removed all contaminated soils or if more excavating, sampling, and analyses are required. All equipment used for the clean-up will be washed after completing the response, in accordance with the Decontamination Procedures. Equipment that cannot be successfully decontaminated will be characterized and disposed of in accordance with HWMR-6.

Fires and Explosions (264.56(e))

In the event of a potential or actual fire or explosion at WSTF, the Emergency Center or the Fire Department will be notified through either emergency fire alarms, telephone or radio contact. The Emergency Center or Fire Department will then notify the ERC. The ERC will activate the Contingency Plan. The WSTF HAZMAT Emergency Response Team will have the duty to take the necessary actions to contain and alleviate the emergency under the direction of the Incident Commander and the ERC.

If flammable materials are involved in an incident and are on fire, the IC will immediately:

1) Have all non-essential personnel evacuated from the affected area;

2) Ensure that the appropriate fire control measures are taken (e.g., removal of ignition sources, availability of suitable fire control agents, activation of fire suppression systems);

3) Direct containment activities (e.g., dikes, berms) to control the spread of flammable materials and potentially contaminated run-off; and

4) Ensure that all process control systems are shut off and monitored for any leaks or pressure build-up.

If flammable materials are involved and are not on fire, the IC will take all steps necessary to prevent ignition or recurrence of any fire.

The primary concerns during a potential or actual fire situation, whether it involves flammable or non-flammable materials, are the spread of fire to adjacent areas, exposure of personnel to toxic gases or vapors, and the potential of contaminated water run-off due to fire control activities.

The spread, or recurrence of fire, can occur through direct impingement on neighboring structures or from movement of flammable vapors to points of ignition. The IC will evaluate data on known chemical constituents in effected areas and will include such factors as flammability, vapor density, lower and upper explosive limits, wind direction and velocity, surrounding topography and possible sources of ignition when formulating emergency response activities. Possible alternatives in any fire control situation may include: water deluge on neighboring structures to prevent ignition; water mist to knock down and dissipate explosive or flammable vapors; evacuation of low lying areas where vapors may collect; and the removal of all ignition sources in potentially affected areas.

If the IC determines that evacuation of surrounding areas is necessary, he shall follow the Evacuation Plan procedures included in the greater plan. The initial evacuation perimeter will be at least 2000 ft. from the effected area.

As part of the initial assessment, the IC will also determine the type and level of personnel protection equipment that will be necessary for emergency response activities. Both flammable and non-flammable materials which are involved in a fire can potentially emit highly toxic decomposition products when subjected to hear or flame. As part of any emergency assessment, a thorough evaluation will be made of the potential for human exposure and the levels of personnel protection that may be required for emergency response activities. Based on known toxicities and potential combustion by-products, specified equipment may include: bunker gear; splash suits; chemical cartridge respirators; self-contained breathing apparatus (SCBA's), or; ILC suit .

To prevent run-off of contaminated water which may be used in fire control activities, the EC will evaluate the existing topography in the effected area to determine potential flow paths. If substantial amounts of water are to be used, dikes and berms will be constructed to provide containment for any runoff. After emergency response activities are completed, the contained run-off will be analyzed to determine if it is a hazardous waste and, if required, will be managed in accordance

with all applicable regulations.

Containment Activities

In the event of a spill or release of a hazardous substance, one of the duties of the first responder (Level II) is the containment of any free liquids. This is to be done with spill control booms, spill pillows, earth, or any materials available, as needed. The objective of containment activities is to first control the spread and runoff of the material, and then to absorb the contained materials to minimize infiltration into the ground.

Decontamination Procedures (264.56(h)(2))

Post clean-up decontamination of personnel will take place in a decon stations designed to prevent the spread of contamination. The clean-up personnel will wear disposable outer garments or totally encapsulated suits. Decontamination will include: the physical removal of loose contaminants using rinse water and antistatic solutions; the scraping, brushing, wiping or absorption of adhering contaminants; and the rinsing or evaporation of volatile liquids. Disposable garments will be containerized for disposal in compliance with HWMR-6 and the totally encapsulated suits will be cleaned and inspected by the WSTF contamination control facility (clean room).

WSTF is equipped with a cleaning facility for the decontamination of a wide variety of materials that are tested on site. Post-emergency equipment for decontamination can be serviced in the "clean room" or in the LABCON Highbay by the on site cleaning facility. The location for cleaning will depend upon the size of equipment contaminated. Decontamination will be accomplished with the use of biodegradable soap, hot water, and steam. The resulting waste will be of such a dilute nature that no incompatibilities will result. Decontamination will be determined by visual inspection or by analysis of the rinsate. The determination of decontamination will be based on the chemical and physical nature of the contaminant.

Decontaminated equipment will be inspected by the facilities maintenance group. Diaphragms, gaskets, seals, and other soft goods that require replacement will be disposed in compliance with HWMR-6. Protective breathing equipment is inspected and maintained by the WSTF Cleaning Facility. Materials that require disposal will be restocked from with the WSTF warehouse or reordered by the WSTF Environmental Section.

Any hazardous waste generated by the decontamination process at the cleaning facility will be collected by the 200 area evaporation tanks, which services the clean room and LabCon Highbay. Any emergency response equipment or materials which cannot be

Waste Fuel Treatment Unit

An approximation of the maximum waste inventory to be managed over a 30 year period of continuous operations is 2.8 million gallons. Included in this quantity are hydrazine fuels and water. Smaller amounts of chlorine and sodium hydroxide will be included in the mixture. Water will account for 90 percent or more of the overall volume. Amounts are based on Table A-1 in the January 1992 RCRA application, Part A (Permit Attachment II-8). Permit Attachment IV-2 identifies maximum amounts of individual hydrazines that are permitted on an annual basis.

At closure, all accumulated waste fuel will be treated, transported and pumped into the Evaporation Tank Unit's evaporation tanks. Facility certified Waste Handlers will decontaminate the unit using high pressure injected hot water with a biodegradable detergent. Three separate rinses will be used on all surfaces of the unit's components and equipment used in conjunction with the hazardous waste management process. The third rinsate will be analyzed to determine if decontamination has been completed. If decontamination is complete, then all rinsate will be collected for disposal in the Evaporation Tank Unit; if not, then rinsing will continue until decontamination is complete. Any potentially contaminated tanks, process lines, or other materials that cannot be decontaminated at the unit site, will be characterized for disposal at an off-site RCRA permitted disposal facility.

Open Detonation Unit

An approximation of the maximum waste inventory to be managed over the next 30, year period of continuous operations is 10,500 pounds of type A,B and C waste explosives. This amount is based on Table A-1 in the January 1992 RCRA application, Part A (Permit Attachment II-8). Permit Attachment V-2 identifies maximum amounts of waste explosives that are permitted on an annual basis. The unit has been in operation since the early 1960's, and under interim status since 1988.

Soil sampling of this unit for organic explosive residues or associated heavy metals has been performed since December, 1989. Monitoring will be continued for total organic explosive residues and total metals unitl closure. Further discussion for sampling and analysis of the open Detonation Unit are in Permit Attachment V-4.

The actual closure of this unit is intended to be a "clean closure". Any residues remaining in the unit, that exceed quantities allowed by this Permit, will be removed by excavation and disposed of in accordance with HWMR-6.

PERMIT ATTACHMENT II - 8

HAZARDOUS WASTE PERMIT APPLICATION PART A

TABLE A-1
ESTIMATED ANNUAL WASTE DISTRIBUTION

WASTE CODE	ESTIMATED ANNUAL AMOUNT	EVAPORATION TANKS (T01)	DRUM STORAGE FACILITY (S01)	CHLORINATION FACILITY (T04)	OPEN DETONATION (T04)
D001	24(T)	20(T)	4(T)	N/A	N/A
D002	21(T)	18(T)	3(T)	N/A	N/A
D003	900(P)	50(P)	500(P)	N/A	350(P)
D004	85(P)	75(P)	10(P)	N/A	N/A
D005	4(T)	2(T)	2(T)	N/A	N/A
D006	1400(P)	400(P)	1000(P)	N/A	N/A
D007	3.2(T)	0.2(T)	3(T)	N/A	N/A
D008	6(T)	N/A	2.5(T)	N/A	N/A
D009	1(T)	N/A	1(T)	N/A	N/A
D011	5(T)	4(T)	150(P)	N/A	N/A
D018	10(T)	10(T)	10(T)	N/A	N/A
D019	10(T)	10(T)	10(T)	N/A	N/A
D035	10(T)	10(T)	10(T)	N/A	N/A
D038	10(T)	10(T)	10(T)	N/A	N/A
D040	10(T)	10(T)	10(T)	N/A	N/A
F001	37(T)	30(T)	7(T)	N/A	N/A
F002	6.5(T)	6(T)	6.5(T)	N/A	N/A
F003	3(T)	1(T)	2(T)	N/A	N/A
F004	6(T)	4(T)	2(T)	N/A	N/A
F005	6(T)	4(T)	2(T)	N/A	N/A
F006	25(P)	75(P)	10(P)	N/A	N/A
F007	85(P)	75(P)	10(P)	N/A	N/A
F008	85(P)	75(P)	10(P)	N/A	N/A
F009	85(P)	75(P)	10(P)	N/A	N/A
P068	106(T)	106(T)	500(P)	106(T)	N/A
P078	6(T)	6(T)	500(P)	N/A	N/A
P082	150(P)	N/A	150(P)	N/A	N/A
U098	100(T)	100(T)	500(P)	100(T)	N/A
U099	100(T)	100(T)	500(P)	100(T)	N/A
U133	40(T)	40(T)	500(P)	40(T)	N/A

(P) = Pounds per year
(t) = Tons per year

TABLE A-2
HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
10-07-03	WASTE PLATE DEVELOPER	D002	50 GALLONS
10-08-01	WASTE PHOTO SOLUTION	D011	120 GALLONS
10-08-02	AMMONIUM HYDROXIDE	D002	13 GALLONS
20-01-11	SPENT OAKITE HD128 SOLUTION	D002	2008 GALLONS
20-01-13	SPENT OAKITE RUSTRIPP	D002	1000 GALLONS
20-01-14	SPENT PICKLING SOLUTION	3002	500 GALLONS
20-02-14	SPENT X-RAY FIXER SOLUTION	D011	124 GALLONS
20-03-12	C-41 FIXER	D011	80 GALLONS
20-03-15	B&W FIXER	D011	45 GALLONS
20-03-17	SPENT BLEACH-FIX R-3	D011	25 GALLONS
20-03-25	CHROME SIX BLEACH FIX	D011	5 GALLONS
20-03-28	RA-4 BLEACH FIX	D011	300 GALLONS
20-03-31	WASTE P-4 FIXER	D011	50 GALLONS
20-04-01	AQUEOUS LAB WASTES	F002, F003, etc.	1000 GALLONS
20-05-06	SPENT TINPOSIT SOLUTION	D002	12 GALLONS
30-01-01	WATER CONTAMINATED W/FUEL	P058	100 GALLONS
30-01-02	WATER CONTAMINATED W/OX	P078	100 GALLONS
30-01-03	FUEL ASPIRATOR WATER	P068	200 GALLONS
30-01-04	OX ASPIRATOR WATER	P078	200 GALLONS
35-01-01	DECON WATER W/FUEL	P068	100 GALLONS
35-01-02	DECON WATER W/OX	P078	100 GALLONS
35-01-07	FUEL FLOW TEST WATER	P068	4000 GALLONS
35-01-14	SCRUBBER WATER CONT. W/FUEL	P068	18 GALLONS
40-01-01	WATER CONTAMINATED W/FUEL	P068	15000 GALLONS
40-01-02	WATER CONTAMINATED W/OX	P078	100 GALLONS
40-01-03	FUEL ASPIRATOR WATER	P068	500 GALLONS
40-01-04	OX ASPIRATOR WATER	P078	500 GALLONS
40-02-07	ELECTROLYTE FOR BATTERIES	D002	30 GALLONS
60-01-01	DECON WASTE WATER	F001	100 GALLONS
30-02-01	HYDRAZINE CONT. DECON WATER	U133	100 GALLONS
30-01-33	TREATED VENT TANK RESIDUE	P068, U133, U099	4000 GALLONS
40-01-47	TREATED VENT TANK RESIDUE	P068, U133, U099	4000 GALLONS

TABLE A-3
HAZARDOUS WASTE TO CSU

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
10-01-10	WASTE SEPARATOR OIL	F001, F005, D007, D008	200 GALLONS
10-01-11	OILY SLUDGE	F001, F005, D007, D009	390 GALLONS
10-02-02	MAC SHOP OIL	F001, F005	220 GALLONS
10-03-01	PAINT WASTE	F001, D001, D009	250 GALLONS
10-04-05	WASTE MERCURY SWITCHES	D009	45 POUNDS
10-06-06	WASTE REFRIGERATION OIL	F001	100 GALLONS
10-10-04	OILY SLUDGE	F001, F005, D007, D008	55 GALLONS
20-01-08	WASTE CHROMATES	D006, D007	175 GALLONS
20-01-21	FREON STILL BOTTOMS	F001	50 GALLONS
20-01-25	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
20-01-33	CONTAMINATED DEBRIS	F001	30 LBS
20-02-15	SPENT CHROMIUM PLATING SOLUTION	D007	2 GALLONS
20-04-04	SPENT ORGANIC SOLVENTS	MULTIPLE CODES	150 GALLONS
20-04-11	SPENT NI-CAD BATTERIES	D006, U133, U099	350 POUNDS
20-04-15	MERCURY CONTAMINATED MATERIALS	D009	45 POUNDS
20-04-18	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
20-07-04	WASTE HALOCARBON CONT. OIL	F001	60 GALLONS
20-07-06	FREON CONTAMINATED SOFT GOODS	F001	90 POUNDS
20-09-02	LITHIUM BATTERIES	D003	1 POUND
20-13-07	SPENT NI-CAD BATTERIES	D006	350 POUNDS
27-01-07	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
27-01-10	CONTAMINATED DEBRIS	F003	0.25 GALLONS
30-01-07	CONTAMINATED WASTE OIL	F001	20 GALLONS
30-01-08	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
30-01-36	MERCURY BATTERIES	D009	1 POUND
40-02-15	CONTAMINATED WASTE OIL	F001	200 GALLONS
40-01-08	FUEL CONTAMINATED SOFT GOODS	P068, U099, U133	150 POUNDS
40-01-20	SPENT NI-CAD BATTERIES	D006	350 POUNDS
30-01-06	CONTAMINATED DEBRIS	MULTIPLE CODES	50 POUNDS
40-01-07	CONTAMINATED DEBRIS	MULTIPLE CODES	50 POUNDS
40-02-07	CONTAMINATED DEBRIS	MULTIPLE CODES	50 POUNDS

TABLE A-3
HAZARDOUS WASTE TO CSU

WIWPS #	WASTE NAME	EPA ID #	QUANTITY
30-02-06	CONTAMINATED WASTE OIL	F001	150 GALLONS
30-01-29	WASTE TONER PREMIX	D001	2 GALLONS
40-01-42	WASTE TONER PREMIX	D001	2 GALLONS
30-02-18	SPENT ORGANIC SOLVENTS	D001	2 GALLONS
40-01-48	MERCURY BATTERIES	D009	1 POUND
40-01-42	WASTE ACETONE	D001	2 GALLONS
40-02-01	WASTE ACETONE	D001	0.1 GALLONS
40-02-15	CONTAMINATED WASTE OIL	F001	100 GALLONS
80-01-05	MERCURY CONTAMINATED MATERIALS	D009	45 POUNDS
80-01-06	SOLVENT CONTAMINATED SOFT GOODS	SEE FILE	5 POUNDS
80-01-07	WASTE HALOCARBON OIL	F001	0.7 POUNDS
80-02-09	FUEL CONTAMINATED SOFT GOODS	P068	150 POUNDS
80-02-25	CONTAMINATED VACUUM OIL	F001	2 GALLONS
80-04-03	WASTE ORGANIC SOLVENTS	F003	1 GALLON

TABLE A-4
WIWPS NUMBER ASSOCIATED WITH EPA WASSTE CODES FOR HAZARDOUS WASTE GENERATED IN QUANTITIES GREATER THAN 10 GALLONS/YEAR

D001	D002	D003	D004
10-03-01	10-07-03	70-01-01	NONE
20-01-05	10-08-02		
20-05-04	20-01-11		
30-01-25	20-01-14		
40-01-19	20-01-31		
40-02-08	20-05-06		
80-04-01	20-13-07		
	40-02-07		

D006	D007	D008	D009
20-04-11	10-01-11	10-01-06	10-03-01
20-13-07	10-03-01	10-01-11	
30-01-20	10-10-04	10-03-01	
40-01-20	20-01-08	10-04-01	
	20-01-32	10-10-04	
		30-01-19	
		20-02-06	
		90-01-05	

D011	F001	F002	F003
10-08-01	10-01-11	10-01-08	20-01-17
20-02-14	10-02-02	20-04-01	20-01-30
20-03-02	10-10-04	40-01-44	20-04-01
20-03-07	20-01-17		
20-03-12	20-01-19		
20-03-15	20-01-21		
20-03-17	20-01-27		
20-03-25	20-01-30		
	20-04-01		
	20-07-04		
	20-07-06		
	40-01-07		
	40-02-15		
	60-01-01		

TABLE A-4 (Con't.)

F004	F005	F006	F007
10-01-08	10-01-11	NONE	NONE
20-04-01	10-02-02		
	10-10-04		
	20-01-07		
	20-04-01		

F008	P068	P078	U099
NONE	20-04-03	30-01-02	20-04-03
	20-04-18	30-01-04	20-04-18
	20-20-01	35-01-02	27-01-07
	27-01-07	40-01-02	35-01-03
	30-01-01	40-01-04	80-02-09
	30-01-03	40-02-15	
	30-01-22		
	35-01-01		
	35-01-03		
	40-01-01		
	40-01-03		
	40-01-22		
	40-02-15		
	80-02-04		
	80-02-09		
	80-02-23		

U133
20-04-03
20-04-18
20-20-01
27-01-07
35-01-03
80-02-04
80-02-09
80-02-23

TABLE A-5
CHEMICAL DESCRIPTION OF
HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS#	CHEMICAL DESCRIPTION
10-07-03	WATER, >60%; SODIUM SULFITE, <4%; POTASSIUM HYDROXIDE, <3%; N-AMINO ETHYLETHANOLAMINE, <3%; SODIUM HYDROXIDE, <3%.
10-08-01	WATER, 70-85%; SODIUM HYDROXIDE, 1-5%; POTASSIUM BROMIDE, 1-5%, HYDROXQUINONE, 1-5%; 1-PHENYL-3-PYRAZOLINONE, <1%; SODIUM SULFITE, 1-5%; BENZOTRIAZOLE, <1%; EDTA-TERA SODIUM SALT, <2%; SILVER, <50 ppm; SODIUM THIOSULFATE, <20%; POTASSIUM IODINE, <1%.
10-08-02	WATER, 75%; AMMONIUM HYDROXIDE, <25%.
20-01-11	WATER, 60%; SODIUM HYDROXIDE, <40%; SODIUM CARBONATE, <25%; SODIUM METASILICATE, <5%; SODIUM PYROPHOSPHATE, <2%.
20-01-13	WATER, 85%; SODIUM HYDROXIDE, <15%; SODIUM CARBONATE, <%.
20-01-14	WATER, 80%; HYDROFLOURIC ACID, 15%; NITRIC ACID, 5%.
20-02-14	WATER, 70-85%; SODIUM SULFITE, <25%; SODIUIM CARBONATE, <15%; HYDROQUINONE, <3%; P-METHYLAMINAPHENOL SULFATE, <2%; SODIUM BROMIDE, <5%; SODIUM METABISULFITE, <15%; POTASSIUM SULFITE, <15%; POTASSIUM HYDROXIDE, <1%; ACETIC ACID, <50%; 1-PHENYL-3-PHARAZOLIDINONE, <2%; GLUTARALDEHYDE, <10%; GLUTARALDEYDE BISULFITE, <5%; PROPYLENE GLYCOL <10%; P-TERIARY-OCTYLOPHENOXY POLYETHYL ALCOHOL, <1%; SILVER, <50 ppm.
20-03-12	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.
20-03-25	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.
20-03-28	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.
20-03-31	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM BISULFITE, <1%; SILVER, <10 ppm.
20-03-15	WATER, 90%; AMMONIUM THIOSULFATE, <10%; SODIUM ACETATE, <1%; BORIC ACID, <1%.
20-03-17	WATER, 95%; SODIUM BROMIDE, <5%; AMMONIA, <1%; AMMONIUM THIOSULFATE, <5%; SODIUM BISULFATE, <1%.
20-04-01	WATER, 99%; TRACES OF HALOGENATED AND NON-HALOGENATED SOLVENTS, ACIDS, BASES, AND SOLUBLE SALTS.
20-04-03	WATER, 70-99%; HYDRAZINE, <30%; DIMETHYL HYDRAZINE, <30%; METHYL HYDRAZINE, <30%.
20-05-04	WATER, 75%; AMMONIUM PERSULPHATE, <25%; MERCURIC CHLORIDE, <1%.
20-05-08	WATER, 99%; TIN, <1%; THIOUREA, <1%; HYDROCHLORIC ACID, <1%.
30-01-01	WATER, 99-100%; METHYL HYDRAZINE, 0-330 ppm.
30-01-04	WATER, 90-100%; NITRIC ACID, 0-10%.
30-02-01	WATER 99-100% HYDRAZINE. 0-330 ppm
35-01-01	WATER, 89-100%; METHYL HYDRAZINE, 0-330 ppm.
35-01-02	WATER, 90-100%; NITRIC ACID, 0-10%.

TABLE A-5
CHEMICAL DESCRIPTION OF
HAZARDOUS WASTE GREATER THAN 10 GALLONS/YEAR TO EVAP TANKS

WIWPS#	CHEMICAL DESCRIPTION
40-01-01	WATER, 99-100%; METHYL MYDRAZINE, 0-330 ppm.
40-01-02	WATER, 99-100%; NITRIC ACID, 0-10%.
40-01-03	WATER, 99-100%; METHYL HYDRAZINE, 0-330 ppm.
40-01-04	WATER, 90-100%; NITRIC ACID, 0-10%.
40-01-04	WATER, 90-100%; NITRIC ACID, 0-10%.
40-01-44	WATER, 99%; FREON, <200 ppm.
40-02-07	WATER, 50%; SULFURIC ACID, 10%; LEAD, <100 ppm.
60-01-01	WATER, 100%; NO CONTAMINATION DETECTED.

MODULE III - CONTAINER STORAGE UNIT

III.A. MODULE HIGHLIGHTS

III.A.1. This Permit Authorizes storage of hazardous waste in containers in the 100 Area, Container Storage Unit. The unit is located at the NASA White Sands Test Facility, approximately 20 miles northeast of the city of Las Cruces. The Container Storage Unit is housed in Building 161. Waste managed at the unit is produced during research and development operations at the facility. The entire operational portion of the unit is equipped with secondary containment.

III.A.2. Detailed information about the unit's operation and design are provided in Permit Attachment III-1.

III.B. PERMITTED AND PROHIBITED WASTE

III.B.1. The Permittee may store in the Container Storage Unit only the hazardous wastes listed in Permit Attachment III-2 (summary of Part A of the Permit application), subject to the terms of this Permit.

III.B.2. The Permittee shall apply for and receive a Permit Modification prior to storing additional types of hazardous waste not identified by US EPA waste code number in Permit Attachment III-2.

III.B.3. When the amount of any waste handled in a calendar year exceeds the amount listed for the corresponding waste code in Permit Attachment III-2, the Permittee shall submit a report explaining the situation to the NMED. If the increase in annual quantities is expected to be repeated, the Permittee shall submit a revised Part A form by March 1 of the following year. New quantities listed in the revised Part A will be used to prepare a new Permit Attachment II-2, which will then become a part of this Permit. If management practices specified in Permit Attachment II-1 through II-6 and Permit Attachment III-I change as result of increase in the new annual quantities, the Permittee shall request a Permit Modification identifying the changes.

III.B.4. The Permittee shall comply with the following conditions (Permit Conditions III.B.4.a. through c) regarding storage of waste identified in HWMR-6, Part VIII, §§ 268.10, 268.11, and 268.12 as being subject to land disposal restrictions on land disposal in accordance with HWMR-6, Part VIII, Subpart C. The same

conditions shall be imposed on storage of any wastes that may become prohibited or restricted from land disposal by the New Mexico Hazardous Waste Management Regulations during the life of the Permit.

III.B.4.a. Waste shall be stored for no longer than one year from the date of its first receipt by the Permittee, unless the Permittee furnishes proof to the Secretary that such storage for periods in excess of one year is solely for the accumulation of such quantities as are necessary to facilitate proper recovery, treatment, or disposal.

III.B.4.b. Each container shall be clearly marked as to its contents and the date each period of accumulation begins.

III.B.4.c. Hazardous wastes meeting the treatment standards in HWMR-6, Part VIII, §§ 268.41, 268.42, and 268.43 are not subject to the storage prohibition in Permit Condition III.B.4.a. above.

III.C. CONTAINER REQUIREMENTS

The Permittee shall store waste in containers equivalent to the containers specified for each waste by DOT in 49 CFR 173. These containers will meet or exceed the requirements for strength and integrity specified by DOT in 49 CFR 178 for each class of container. Any container that must be overpacked due to a breach in its integrity shall be labeled accordingly.

III.D. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g. severe rusting, or apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit and as required by HWMR-6. Part V, § 264.171.

III.E. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall assure that the ability of the container to contain the waste is not impaired by any incompatibility with its contents, as required by HWMR-6, Part V, § 264.172.

III.F. MANAGEMENT OF CONTAINERS

III.F.1. The Permittee shall keep all containers closed during storage, except when it is necessary to add or remove waste, and shall not open, handle or store containers in a manner

which may rupture the container or cause it to leak (HWMR-6, Part V, § 264.173.

III.F.2. The Permittee shall not stack containers on top of one another in accordance with Permit Attachment III-1.

III.F.3. Containers holding liquids shall be stored on secondary containment pallets as specified in Permit Attachment III-1.

III.G. CONTAINMENT SYSTEM

The Permittee shall construct and maintain the containment system in a leak proof and fully operable condition in accordance with plans and specifications, contained in Permit Attachment III-I and as required by HWMR-6, Part V, § 264.175.

III.H. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the container storage area weekly to detect leaking containers and deterioration of containers, containment pallets and the building containment system, caused by corrosion or other factors, in accordance with HWMR-6, Part V, § 264.174 and Permit Conditions II.F.I. and II.F.2.

III.I RECORD KEEPING

The Permittee shall place the results of all waste analyses and trial tests in the facility operating record as stipulated by HWMR-6, Part V, § 264.73(b)(3).

III.J. CLOSURE

At closure of the Container Storage Unit, the Permittee shall remove all hazardous wastes and hazardous waste residues from the containment system in accordance with procedures in Permit Attachment II-7 (Closure Plan) and as required by HWMR-6, Part V, § 264.178.

III.K. SPECIAL CONTAINER PROVISIONS FOR IGNITABLE OR REACTIVE WASTE

III.K.1. The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line (HWMR-6, Part V, § 264.176).

III.K.2. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Permit Attachment II-5 (HWMR-6, Part V, §§ 264.17(a) and 264.176.

PERMIT ATTACHMENT III-1
DESIGN OF THE CONTAINER STORAGE UNIT

Introduction

This narrative is intended to describe the use and design of the 100 Area Container Storage Unit at the WSTF. The unit consists of one warehouse building that will receive and house RCRA hazardous waste as well as other wastes generated from various areas of the Facility. Storage of containerized waste at the unit will vary from none to a maximum capacity of 48, 55-gallon drums, or that equivalent in volume using other types of containers. The number of containers in storage at anyone time will be dependent upon the quantities of waste packaged and stored at the WSTF during a given time span and the time required to arrange for off-site disposal at an approved RCRA location.

An engineering and environmental assessment was conducted by an independent registered professional engineer who certifies that the unit is properly designed so that it will be compatible with the wastes intended for storage as specified in HWMR-6, Part V, § 264, Subpart I.

Use and Description of the Container Storage Unit

The Container Storage Unit is housed by Building 161, located in the 100 Area, approximately 500 feet northeast of Building 151. The unit will receive wastes from all areas of WSTF. Examples of wastes to be stored are spent solvents, soft goods contaminated with listed wastes, vacuum pump oil contaminated with hazardous constituents, waste paints, TSCA and non-hazardous waste. Organization of where each waste will be stored is indicated on Figure III-1-1. Waste drums containing liquids will be supported off the floor on secondary containment pallets shown in Figure III-1-2. They will normally contain any leaks that may occur, as well as prevent waste from draining onto the floor. Containers holding waste which is in a solid state may be stored directly on the floor of the building in wooden, plastic or metal boxes. At no time will containers be stacked on top of one another for the purpose of storage. Adequate aisle space will be maintained to allow an inspector access to all sides of each pallet and solid state waste containers. Also, proper spacing will insure that each container can be safely accessed by a portable drum handler or other manual lifting equipment for removal from the building. Drums of incompatible waste will be separated by placing the containers on separate pallets and placing the pallets in separate areas of the building. Flammable and combustible wastes will be stored away from doors when possible.

In addition to drums and other containers that will be used during storage, there will be various items placed in the building necessary for routine operations. There will be a desk

PERMIT ATTACHMENT III-2
ANNUALLY PERMITTED WASTE FOR THE CONTAINER STORAGE UNIT

WASTE CODE	QUANTITY
D001	4 (T)
D002	3 (T)
D003	500 (P)
D004	10 (P)
D005	2 (T)
D006	1000 (P)
D007	3 (T)
D008	2 (T)
D009	1 (T)
DO11	150 (P)
D018	10 (T)
D019	10 (T)
D035	10 (T)
D038	10 (T)
D040	10 (T)
F001	7 (T)
F002	1000 (P)
F003	2 (T)
F004	2 (T)
F005	2 (T)
F006	10 (P)
F007	10 (P)
F008	10 (P)
F009	10 (P)
P068	500 (P)
P078	500 (P)
P082	150 (P)
U098	500 (P)
U099	500 (P)
U133	500 (P)

(T) - Short Tons Total: 158,350 pounds
(P) - Pounds

Note 1: Inaddition to the above waste codes, the permittee may store in quantities up to ten pounds of the waste codes identified in the Part A of Permit Attachment II-8.

Note 2: It is not possible to convert weights to volume due to density contrast of the various wastes.

Note 3: The permitted storage capacity of the Container Storage Unit, at any one time, is 2,640 gallons. The annual storage capacity, specified by the above individual waste codes, is 158,350 pounds.

IV.C. SECONDARY CONTAINMENT

IV.C.1. The Permittee has designed, constructed and is operating the secondary containment systems for the Evaporation Tank Unit, in order to prevent the release of hazardous constituents into the environment as required by HWMR-6, Part V, § 264.193. Details of the design are described in Permit Attachment IV-1.

IV.C.2. The Permittee shall remove all liquids resulting from leaks, spills or precipitation entering into secondary containment in accordance with HWMR-6, Part V, § 264.193(b)(4) and (f).

IV.C.3. A hazardous waste determination shall be made, as required by HWMR-6, Part V, § 262.11, for all liquids removed from secondary containment.

IV.D. OPERATING REQUIREMENTS

IV.D.1. The Permittee shall not place hazardous wastes or treatment reagents in the tank system if they could directly or indirectly through chemical reactions cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail as required by HWMR-6, Part V, § 264.194(a).

IV.D.2. The Permittee shall prevent spills and overflows from the tank or containment systems using the methods described in Permit Attachments IV-1A, IV-1B and IV-1C as required by HWMR-6, Part V, § 264.194(b).

IV.D.3. Hazardous waste shall be removed from the treatment tank in accordance with the facilities removal plan in Permit Attachment IV-1B (HWMR-6, Part VIII, § 268.50 (a)(2)).

IV.E. AIR EMISSION EVALUATION

IV.E.1. Volatile Organic Compound concentrations shall be monitored for all waste streams entering the evaporation tanks through the hazardous waste drain line component of the unit in accordance with Permit Attachments II-1 (Waste Analysis Plan) and IV-4, VOC Monitoring Plan and when effective, § 264.1083.

IV.E.2 Volatile Organic Compound concentrations shall be determined for all waste streams entering the evaporation tank from remote points of generation in accordance with Permit Attachments II-1 and IV-4 and when effective, § 264.1083.

IV.F. RESPONSE TO LEAKS OR SPILLS

In the event of a leak or a spill from the evaporation tanks, drain lines, drain line sump and the tank systems' secondary containments, or if a component of the unit becomes unfit for continued use, the Permittee shall remove the component from service immediately and complete the following actions (HWMR-6, Part V, § 264.196(a)-(f)):

IV.F.1. Stop the flow of hazardous waste into the unit and inspect the component to determine the cause of the release.

IV.F.2. Remove all waste and accumulated precipitation from the unit or affected component(s) within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the unit. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Secretary and demonstrate that a longer time period is required.

If the collected material is a RCRA hazardous waste, it must be managed in accordance with all applicable requirements of 40 CFR Parts 262-264. The Permittee shall note that if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 CFR Part 302.

IV.F.3. Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water.

IV.F.4. Contain nonvisible releases to the environment. The Permittee shall monitor volatile organic content of all hazardous wastes in accordance with Permit Attachment IV-4 for the purpose of preventing a threat to human health and the environment.

IV.F.5. Close the system in accordance with the Closure Plan, Permit Attachment II-7, unless the following actions are taken:

IV.F.5.a. For a release caused by a spill that has not damaged the integrity of the unit, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity ofthe unit

before returning the Evaporation Tank Unit to service.

IV.F.5.b. For a release caused by a leak from the primary liner to the secondary containment system, the Permittee shall repair the primary liner prior to returning it to service.

IV.F.6. For all major repairs to eliminate leaks or restore the integrity of the Evaporation Tank Unit, the Permittee must obtain a certification by an independent, qualified, registered professional engineer that the repaired unit is capable of handling hazardous wastes without release for the intended life of the unit or the units components before returning the unit to service. Examples of major repairs are typically structural in nature, such as replacement of a primary or secondary liner, or repair of any ruptured drain line piping.

IV.G. MONITORING AND EVALUATING RELEASES TO THE ATMOSPHERE

IV.G.1. When effective, the Permittee shall monitor hazardous waste emissions from the Evaporation Tank Unit in accordance with all applicable requirements of § 264 subpart CC, whereby demonstrating that hazardous waste constituent placed in the system, their quantity and their concentrations do not pose a threat to human health and the environment.

IV.H. INSPECTION SCHEDULES AND PROCEDURES

IV.H.1. The Permittee shall inspect the Evaporation Tank Unit including ancillary equipment, in accordance with Permit Attachment II-3, the Inspection Schedule.

IV.H.2. The Permittee shall inspect the overfill controls, in accordance with the schedule in Permit Attachment II-3 and as required by HWMR-6, Part V, § 264.195(a).

IV.H.3. The Permittee shall inspect the following components of

the tank system once each operating day (HWMR-6, Part V, § 264.195(b)):

IV.H.3.a. Above ground portions of the tank system, if any, to detect corrosion or releases of waste;

IV.H.3.b. Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the Evaporation Tank Unit is being operated according to its design;

IV.E.3.c. Construction materials and the area immediately surrounding the externally accessible portion of the Evaporation Tank Unit, including the secondary containment systems, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

IV.H.4. The Permittee shall document compliance with Permit Conditions IV.G.1. through IV.G.3. and place this documentation in the operating record for the Facility as required by HWMR-6, Part V, § 264.195(d).

IV.I. RECORDKEEPING AND REPORTING

IV.I.1. The Permittee shall report to the Secretary, within 24 hours of detection, when a leak or spill occurs in the environment from any component of the Evaporation Tank Unit as specified by HWMR-6, Part V, § 264.196(d)(1). A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned-up, need not be reported as provided by the exemption HWMR-6, Part V, § 264.196(d)(2). Releases that are contained within a secondary containment system need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, this report satisfies the requirements of this Permit Condition in accordance with HWMR-6, Part V, § 264.196(d)(1).

IV.I.2. Within 30 days of detecting a release to the environment from any component of the Evaporation Tank Unit, the Permittee shall report the following information to the Secretary in compliance with HWMR6, Part V, § 264.196(d)(3):

a. Likely route of migration of the release;

b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Secretary with a schedule of when the results will be available. This schedule must be provided before the required 30-day submittal period expires;

d. Proximity of down-gradient drinking water, surface water, and populated areas; and

e. Description of response actions taken or planned.

IV.I.3. The Permittee shall submit to the Secretary all certifications of major repairs to correct leaks within seven days from returning the tank system to use (HWMR-6, Part V, § 264.196(f)).

IV.I.4. The Permittee shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the tank system as required by HWMR-6, Part V, § 264.192(g).

IV.I.5. The Permittee shall keep on file at the facility the written assessment of the tank system's integrity as

required by HWMR-6, Part V, § 264.191(a).

IV.I.6. The Permittee shall keep on file at the facility, for a period of three years, current records of the depth of each phase or transitional phases of waste being treated in each evaporation tanks as noted in Permit Attachment IV-1B and as required by HWMR-6, Part VIII, § 268.50(c).

IV.J. CLOSURE AND POST-CLOSURE CARE

IV.J.1. At closure of the Evaporation Tank Unit, the Permittee shall follow the procedures in the Closure Plan, Permit Attachment II-7 and in compliance with HWMR-6, Part 264.197(a).

IV.J.2. If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated, in accordance with the Closure Plan, then the Permittee shall close all components of the Evaporation Tank Unit and perform post-closure care following the requirements of HWMR-6, Part 264.197(b) and (c).

IV.K. SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

IV.K.1. The Permittee shall not place ignitable or reactive waste in the tank system or in the secondary containment system, unless the procedures specified in Permit Attachment II-5 are followed in accordance with HWMR-6, Part V, § 264.198(a).

IV.K.2. The Permittee shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1977 or 1981) and as stipulated by HWMR-6, Part V, § 264.198(b).

IV.L SPECIAL TANK PROVISIONS FOR INCOMPATIBLE WASTES

IV.L.1. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same tank system or the same secondary containment system, unless the procedures specified in Permit Attachment II-5 are followed as required by HWMR-6, Part V, § 264.199(a).

IV.L.2. The Permittee shall not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material,

PERMIT ATTACHMENT IV-1A
EVAPORATION TANK UNIT
DESIGN

Abstract

This section describes the NASA White Sands Test Facility's Evaporation Tank Unit and ancillary equipment design for demonstrating compliance with the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart J.

Introduction

The 200 Area Evaporation Tank Unit consists of two 147,000 gallon capacity steel tanks, and a 4 inch drain line with a 370 gallon in-line sump tank. Hazardous waste is conveyed to the tanks either through a gravity flow drain line system from nearby generators in the 200 Area and the adjacent 800 Area, or by truck from other remote generation points at the facility. Hazardous waste brought in from remote locations is conveyed to the unit at the drum pumping station that is situated between the two evaporation tanks.

Evaporation Tanks

The two evaporation tanks are 79 foot in diameter (horizontally), with open tops (Figure IV-1-1). They rise 6 1/4 feet above the final surfaced grade. In design, the tanks are identical. The tanks consist of three containment components: a self supporting 1/4 inch carbon steel structure in the outermost position; and two inner, 30-mil PVC membranes that are separated from each other and from the self supporting portion of the tank by geotextile material (Figure IV-1-2). Each tank is equipped with six (6) turbine vents located around the tank wall (Figure IV-1-5). The vents are designed to remove excess air between the carbon steel supporting structure and the liners to minimize liner movement during winds. Secondary leak protection is provided by the outermost PVC membrane. A sight glass between each component provides leak detection in the tank and this is further discussed in Attachment IV-1C.

The tanks were assessed in 1991 for their resistance to soil corrosion. It was concluded that the estimated service life would be 16 years. The independent certified professional engineer recommended that, "The tanks be used in their present condition without upgrading the cathodic protection system, for a period of 10 years from their installation date." The tanks were installed in fiscal year 1988, and put into operation in fiscal year 1989.

Dimension were selected for each tank to provide a maximum capacity of 147,000 gallons in addition to including a 2 foot freeboard. The designed freeboard is intended to prevent

overtopping from wave or wind action and additions from storm precipitation.

Pressure control valves are unnecessary since the tanks operate at atmospheric pressure. All valves in the tank unit are manually operated. Flows to either evaporation tank can be shut-off entirely for the purpose of maintenance or an emergency.

For the protection of migratory fowl and other wildlife, a net has been installed over the tops of the tanks and a chain link fence surrounds the entire periphery of the unit.

A warning light and a automatic telephone dialing system is in place to notify facility personnel when the active tank has reached design capacity. When the capacity has been reached, a manually operated valve is regulated to switch the drain line waste transfers to the then inactive tank or entirely shut-off the drainage to either tank. Further discussion of this safety system is discussed in Attachment IV-1B.

Drain Line Pipe

The drain line pipes are specifically designed for conveying liquid hazardous wastes from the 200/800 and LABCON area buildings to the evaporation tanks (Figure IV-1-3). Initial installation of the drain line was in fiscal year 1990, and it was first used in fiscal year 1991. Subsequent construction and upgrading took place fiscal year 1991 and 1992.

The drain line pipes consist of a primary drain line surrounded by a secondary containment line. The primary drain lines for 200/800 Area section and the Sump/Evaporation Tank section are filament wound, fiberglass reinforced vinylester pipe with a five hundredths inch integral reinforced liner. The primary drain lines are assembled with fittings of the same construction and a two part vinlyester thermoset adhesive. The secondary containment line is a filament wound, fiberglass reinforced, epoxy pipe with an integral epoxy liner. The secondary containment lines are assembled with compression molded, two piece epoxy reinforced fiberglass fittings and a two part amine cured epoxy resin.

The latest extension to the drain lines, the LABCON section, was added to the uppermost end of the 200 Area drain line in the LABCON section of Building 200. The primary drain line for the LABCON section is centrifugally cast reinforced vinylester pipe with a 55 millimeter pure resin liner. The primary drain line is assembled with fittings of the same material and a two part vinylester adhesive. The secondary containment line for the LABCON section is centrifugally cast reinforced vinylester pipe with a 30 millimeter pure resin liner. the secondary containment line is assembled with fittings of the same material and a two part vinylester adhesive.

The upgradient portions of the drain lines are buried below ground while the lower portion, some 127 feet down gradient from a sump tank, is all above ground to the evaporation tanks (Figure IV-1-3).

The sump tank, shown in Figures IV-1-3 and IV-1-4 is considered to be an integral part of the drain line system.

Drain Line Sump Tank

The drain line sump tank is situated approximately midway along the drain line system where three inlet lines intersect with the one outlet line (Figure IV-1-3). Secondary containment is provided by a double wall with the necessary storage capacity in between. The holding capacity of the primary tank is about 370 gallons. Secondary containment and leak detection meet requirements of HWMR-6, Part V, Subpart J (Figure IV-1-4).

All of the vertically cylindrical tank is positioned below finished grade and within a square walled, vertically lined, concrete pit. At its base the pit is unlined. The lower portion of the tank is bedded in a fine homogeneous sand which in turn rest upon native soil.

Construction of the tank is rigid, double walled, reinforced resin plastic. Interior dimensions of the inner wall are 48 inches across (horizontal diameter) by 51 inches in height. Those for the outer wall are 72 inches inside diameter by 62 inches in height. Interior and exterior wall thicknesses are inch. Six inch bond pipe legs are installed at the base of the double tanks in order to separate and support the inner tank from collapsing onto the outer tank.

All three inlet drain line pipes connect through the top of the tank's cover plate and the one outlet drain line pipe connects on centerline, nine inches below the top of the tank.

The cover plate is bolted to both the inner and outer tanks so that a pressure seal is formed. Besides the inlet pipes, the wiring for a moisture sensor, an ultrasonic level sensor and a 4 inch diameter sample port all attach to the top of the cover plate. The sampling
port rises 5 feet above the cover plate, and high enough above the retaining walls to facilitate ease of access at finished grade.

Remote Truck Transfers

Hazardous waste brought to the evaporation tanks by truck is admitted into the tanks at the drum pump station. The station,

PERMIT ATTACHMENT IV-1B
EVAPORATION TANK UNIT
OPERATIONS

Abstract

This section describes the NASA White Sands Test Facility's Evaporation Tank Unit and ancillary equipment operations for the purpose of demonstrating compliance with the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart J.

Introduction

The Evaporation Tank Unit, located in the 200 Area, receives hazardous waste from nearby generators in the 200/800 Area, or by truck from remote generation points at the facility. Those waste streams generated in the 200 Area and the adjacent 800 Area are conveyed to one of the evaporation tanks through a 4 inch gravity flow drain line used exclusively for hazardous waste. For the remote transfers, waste is brought to a "drum pump station", located between the two evaporation tanks. Wastes are then mechanically pumped from drum type containers or from tanker trucks, directly into one of the evaporation tanks.

Source and Nature of Waste Streams

Hazardous waste generated throughout the facility primarily consist of acidic and alkaline waste water generated during aerospace parts cleaning, and dilute concentrations of rocket fuels (hydrazines). Smaller quantities of waste are generated from laboratory testing and photographic processing. All waste streams are water soluble and intentionally diluted with water to help promote chemical compatibility. Further information about chemical compatibility is discussed in the report on waste tracking (Permit Attachment II-1).

Treatment Process

Treatment of the waste in the evaporation tanks is primarily evaporation, but other processes do occur. The average annual rate of evaporation at the facility is about 60 inches per year. Other treatment processes include but are not limited to chemical, biological and solar induced reactions.

An internal policy is established that when a dense phase, similar in chemical composition to a contrasting lighter phase, develops in either of the tanks for a continual period of three months and sustaining a minimum thickness of 12 inches, then all but 3 inches of the dense phase will be removed. Total waste removal will not be attempted under the above conditions in order

to protect the primary liner from tears and abrasions potentially caused from removal operations. Liquid waste removal took place once after treatment operations began in fiscal year 1990, and this resulted from the need to evacuate one of the tanks in order to complete repair from a minor leak detected in the primary liner. In the next two years, no removal was deemed necessary. Waste may also be removed under other circumstances such as when tank capacities have been reached, or access is needed to make repairs, inspections and modifications. Records will be kept of all measurements taken on a monthly basis of the depth and character of the waste including, whether stratified phases are present. When phase changes occur in the liquid waste, the record will indicate if they transitional or clearly separated.

For maintenance of adequate tank freeboard, liquid waste levels in the tanks are monitored every operating day. Prior to the tank levels reaching the four foot height, valves are manually regulated for changing the drain line flow of hazardous waste from one tank to the other. At the time the liquid level reaches a 4 foot height in the tanks, an electric alarm and flashing light are activated. These devices further trigger an automatic telephone dialer that contacts the contractor Environmental Department and WSTF Fire Department.

Prevention of Hazards

Organized work plans for routine procedures, safety training, and engineered design features are elemental in the prevention of hazards.

Operational procedures at the evaporation tank unit are all directed by a general work plan. The current version is titled 200 Area Evaporation Tank System (Part B, Section 3.3.2). Each task is in turn detailed by the directives stated in an associated work authorizing document. In following these procedures, handling of waste will then be conducted in a manner that is safe to human and the environment, and designed for a successful treatment process.

Personnel performing tasks at the evaporative tank unit are all certified in-house as Hazardous Waste Handlers (Permit Attachment II-4, Training). This includes inspectors, sampling personnel, personnel handling waste transfers to or from the tanks, and personnel involved with operational maintenance and all repairs. Tasks such as unit entry, air quality monitoring to determine conditions safe to human health, and selection of appropriate personal protective equipment are examples of skills developed from the training program. The unit design incorporates features that help prevent and reduce the severity of a potential hazard. Many features have

PERMIT ATTACHMENT IV-1C
EVAPORATION TANK UNIT
SECONDARY CONTAINMENT & LEAK DETECTION

Abstract

This section describes the NASA White Sands Test Facility Evaporation Tank Unit's secondary containment and leak detection systems, in order to satisfy the requirements of the New Mexico Hazardous Waste Regulations (HWMR-6) Part V, Subpart J.

Introduction

Secondary containment and leak detection systems have been designed and incorporated into the Evaporation Tank Unit. Components of the unit, having separate secondary containment and leak detection designs, include the 2 evaporation tanks (Figures IV-1-1 and IV-1-2), the hazardous waste drain line (Figure IV-1-3), and the drain line sump tank (Figure IV-1-4).

Both evaporation tanks utilize the same containment and detection design. The design consists of a double plastic membrane supported by the tank's steel structure. An open ended glass tube, positioned beneath the primary (inner) membrane, extends outside the tank in order to observe the presence of liquid waste that potentially could escape into the secondary membrane. A second open ended glass tube positioned between the outer membrane and the steel supporting structure is used to detect liquid waste migration beyond the secondary containment.

For the hazardous waste drain line, the secondary containment and leak detection design use a double walled pipe equipped with a series of electronic sensors. Intermittent flows of liquid hazardous waste travel through the inner pipe. Leak containment and the detection sensors are within the surrounding, outer pipe.

The drain line sump tank is a double tank with one tank surrounding the other. Liquid waste flows through and is contained within the inner tank. The outer tank provides secondary containment for the inner tank, in the case of a leak. Leak detection is provided by an electronic sensor that is located at the interior base of outer tank.

Evaporation Tanks

The supporting structure of each evaporation tank is a 1/4 inch carbon steel shell. Primary and secondary containment is provided by two 30 millimeter PVC interior shell liners which are separated from one another and from the coated carbon steel tank

by geotextile and geonetting (Figure IV-1-2). Drainage beneath the membranes is designed to collect at a low points near the base of the tank. Leak detection for the system consists of sight glasses that are placed beneath each membrane to collect and display escaped liquid waste. These are inspected every operating day, enabling detection of accumulated liquids within a 24 hour time period. The design provides measures that prevent condensation from entering and accumulating in the system. This is accomplished by the continual purge of gaseous nitrogen between the component layers.

Drain Line Pipe

Specifications for the drain line pipe, including secondary containment are discussed in Permit Attachment IV-1A (Design).

Leak detection is provided separately for the different sections of the drain line. The LABCON section, the latest extension to the drain system added to the upper end of the 200 Area drain line, (Figure IV-1-3), utilizes electronic liquid sensors positioned at several points along the length of the line. Leaks into the secondary containment are detected at a control box located in the LABCON area and are reported within 24-hours as a result of a routine inspections every operating day.

For the 200/800 Area section, the drain lines from the 200 and 800 Areas to the drain line sump, (Figure IV-1-3), leaks are detected by an electronic sensor located in the sump's secondary containment. The drain system is designed such that the sensor provides leak detection for both the sump and 200/800 Area drain lines. Leaks detected at the sump trigger an automatic telephone dialer that contacts the Environmental Department and WSTF Fire Department.

For the Sump/Evaporation Tank section, the drain line from the sump to the evaporation tanks, (Figure IV-1-3), leaks are detected by a sight glass located at the evaporation tanks. A gaseous nitrogen purge is used to prevent internal condensation from occurring inside the secondary containment. Leaks detected at the sight glass are reported within 24-hours as a result of routine inspections every operating day.

Drain Line Sump Tank

Details of the secondary containment for the drain line sump tank are discussed in Permit Attachment IV-1A and are illustrated in Figure IV-1-4.

Leaks detected within the sump's secondary containment are derived from the upper portion of the drain line or from the primary containment of the sump. All of these leaks are monitored by a electronic sensor located at the low point of the secondary containment. When triggered, as a result of

moisture detection, the sensor activates an automatic telephoning device that contacts the contractor Environmental Department and WSTF Fire Department..

PERMIT ATTACHMENT IV-2
ANNUALLY PERMITTED WASTE FOR THE EVAPORATION TANK UNIT

WASTE CODE	QUANTITY	
D001	20	(T)
D002	18	(T)
D003	50	(P)
D004	75	(P)
D005	2	(T)
D006	400	(P)
D007	400	(P)
D008	3	(T)
D009	1	(T)
D010	10	(P)
D011	4	(T)
D018	10	(T)
D019	10	(T)
D023	10	(P)
D024	10	(P)
D025	10	(P)
D026	10	(P)
D035	10	(T)
D038	10	(T)
D040	10	(T)
F001	30	(T)
F002	6	(T)
F003	1	(T)
F004	4	(T)
F005	4	(T)
F006	75	(P)
F007	75	(P)
F008	75	(P)
F009	75	(P)
P005	10	(P)
P068	106	(T)
P076	10	(P)
P078	6	(T)
P082	10	(P)
P116	10	(P)
P119	10	(P)
U020	10	(P)
U098	100	(T)
U099	100	(T)
U133	40	(T)
U215	10	(P)

(T) - Short Tons
(P) - Pounds

Note: The total of weights listed above has an approximate volume of 120,000 gallons.

PERMIT ATTACHMENT IV-4:
VOLATILE ORGANIC EMISSIONS MONITORING PLAN

Introduction

The RCRA air emission standards, § 264 subpart CC, establish air emission requirements for owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDF). Compliance with the regulations involves implementation of emission controls or waste determinations to demonstrate that the affected unit is exempt from air emission control requirements. On the effective date of the regulations, the NASA White Sands Test Facility will operate the Evaporation Tank Unit as an exempt unit in accordance with all applicable requirements of § 264 subpart CC and will perform waste determinations as required to document compliance. This section describes the NASA White Sands Test Facility Evaporation Tank Unit's monitoring plan.

Waste Determinations

Waste streams enter the 200 Area evaporation tanks either through the hazardous waste drain line or are pumped directly into the tanks at the drum pumping station. The NASA White Sands Test Facility will perform waste determinations at the point of waste origination or point of waste treatment for all hazardous waste discharged to the evaporation tanks.

The regulations allow the waste determinations to be performed either by direct measurement or knowledge of the waste. Whenever possible, knowledge of the waste will be used as the basis for the waste determinations. For hydrazine type wastes (N_2H_4, MMH, UDMH) containerized and transported to the evaporation tanks, process knowledge and airborne or aqueous phase hydrazine concentrations will provide the basis for waste determinations and a control strategy to limit the discharge of hydrazine waste to waste with a hydrazine concentration of less than 330 ppmw and volatile organic concentration as specified by § 264 subpart CC.

Methylated hydrazine waste (MMH, UDMH) discharged to the evaporation tanks through the hazardous waste drain line will be limited to waste with an average volatile organic concentration of less than 100 ppmw as specified by the RCRA subpart CC regulations and a hydrazine concentration of less than 330 ppmw.

When possible, knowledge of the waste will serve as the primary basis for the for the other hazardous waste discharged to the evaporation tanks. Examples of the information used as the basis of a waste determination by knowledge of the waste are:

- Organic material balances for the source
- Volatile organic concentration measurements for the same type of waste performed in accordance with the requirements of EPA Method 25D or as specified by § 264 subpart CC.
- Documentation showing that the waste generating process does not involve the use of organic materials.
- Test data or information from which the total organic concentration can be computed. Examples include EPA Method 9060 (Total Organic Carbon), EPA Method 8240 (Volatile Organics plus Freon), EPA Method 8270 (Semivolatile Organics) and monitoring or analyses of hydrazines.
- Previous test data for other locations managing the same type of waste; or other knowledge based on manifests, shipping papers, or waste certifications.

Direct measurements by EPA Method 25D or as specified by § 264 subpart CC will serve as the basis for the waste determinations when the waste determination can not be made by knowledge of the waste. All samples will be collected and analyzed in accordance with the US EPA Document SW-846, Test Methods for Evaluating Solid Waste, Physical and Chemical Methods and the requirements of EPA Method 25D in 40 CFR 60, appendix A or as specified by § 264 subpart CC.

Safety Measures

Portable monitoring equipment and protective clothing will be used as necessary to ensure the safety of sampling personnel. The monitoring equipment employed is appropriate to the waste types that will be sampled. If air contaminant levels exceed the Threshold Limit Values (ACGIH most recent addition), Sampling personnel will be required to use auxiliary breathing apparatus and appropriate protective clothing.

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Table V-1. **Permitted Wastes for the Open Detonation Unit**

Description of Hazardous Waste	EPA Waste Code Number	Annual Allowable Quantity
GROUP 1	D003	265 pounds
Pentaerythritol tetranitrate (PETN) Cyclotrimethylene trinitramine (RDX) Cyclotetramethylene tetranitramine (HMX) Trinitrotoluene (TNT)		
GROUP 2	D003	85 pounds
Mannitol Hexanitrate (HM) Lead Azide Black Powders Pentolite Hexanitrostilbene (HNS) Diazodinitrophenol Composition C4 Blasting Caps Detonating Cord Ether Alcohol Collodion Explosive Booster		
GROUP 3	D001	(Included in the 85 pounds for Group 2, but limited to 10 for each item in Group 3)
Potassium Nitrate Ammonium Nitrate Sulphur Aluminum Powders Single Based Smokeless Powders Double Based Smokeless Powders Potassium Chlorate Magnesium Powders Potassium Permanganate Ethanol Methanol		

V.B.3. The Permittee is prohibited from treating hazardous waste that is not identified in Permit Condition V.B.2., including shipping and storage containers for the waste explosives, except in cases where shipping and storage containers are contaminated with or stained by residues of explosives identified in Permit Condition V.B.2..

V.B.4. "Off-site source" refers to waste generated by sources other than the Permittee or sources other than the Permittee's contractor(s) operating on-site. This permit does not allow the Permittee to receive hazardous waste from off-site. If the Permittee is to receive hazardous waste from off-site, he shall apply for and receive a permit modification in accordance with HWMR-6, Part V, § 264.13(c) and Part IX, §§ 270.41 and 270.42.

V.C. DESIGN, CONSTRUCTION, OPERATIONAL AND MAINTENANCE REQUIREMENTS

V.C.1. The Permittee shall maintain the designed, and constructed Open Detonation Unit according to the drawings contained in Permit Attachment V-1.

V.C.1.a. The protective berm illustrated in Attachment V-1 shall be maintained in such a way that-. surface drainage will be eliminated from entering the active portion of the trench (HWMR-6, Part V, § 264.301(f)).

V.C.1.b. Warning signs shall be posted on all four sides of the Open Detonation Unit and as specified in HWMR-6, Part V, § 264.14(c).

V.C.1.c. Standing water will not be allowed in any portion of the trench. All standing water shall be removed within 24-hours after a precipitation event. Unless the water is chemically analyzed, it must be treated as a hazardous waste.

V.C.1.d. Maintenance associated with the Unit shall include removal of visible fragments of waste originating from treatment operations, including but not limited to metal casings.

V.C.2. The Permittee shall operate and treat waste in accordance with Permit Attachment V-2, Explosive Ordnance operations at WSTF.

V.C.3. All treatment shall consist of explosive detonation. No burning shall be permitted unless the Permittee applies for and receives a Permit Modification in accordance with HWMR-6, Part IX, §§ 270.41 and 270.42.

V.D. SAMPLING AND ANALYSIS

The permittee shall conduct a sampling and analysis program, utilizing methodologies and procedures approved by the Secretary and utilizing guidance recommended in Permit Attachment V-3 (EWMR-6, Part V, § 264.278(d)).

V.E. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the Open Detonation Unit on a weekly basis, after storms and in accordance with the inspection schedule in Permit attachment II-3 to detect evidence of deterioration, malfunction and improper operations of run-on and runoff control measures as specified in MM-6, Part V, § 264.273(g).

V.F. RECORDKEEPING AND REPORTING

The Permittee shall maintain in the Operating Record, inventory records that include descriptions, quantities and dates for each waste that is treated, in accordance with HWMR-6, Part V, § 264.73.

V.G. COMPLIANCE SCHEDULE

Item	Date Due for Presentation to the Secretary
Soil Sampling and Analysis Plan that incorporates recommendations proposed in Permit Attachment V-4.	April 1, 1993

PERMIT ATTACHMENT V-2
WASTE EXPLOSIVE ORDNANCE OPERATIONS AND SAFETY AT THE WHITE SANDS TEST FACILITY

This attachment delineates the minimum safety and procedural requirements for treatment of waste explosives at the US National Aeronautics and Space Administration (NASA),, White Sands Test Facility (WSTF). Both specific electric and non-electric firing systems are addressed.

Definitions

WSTF Ordnance Officer: An employee over 21 years of age who has acceptable previous explosives experience and is certified.

Assistant Ordnance Officer: A person with knowledge of explosives, initiators, and explosives operations. This person, when properly certified, will be required to conduct explosive ordnance operations in the absence of the WSTF Ordnance Officer.

explosives: Includes any chemical compound or mechanical mixture which, when subjected to heat, impact, friction, shock, or other suitable initiation, undergoes a very rapid chemical change with the evolution of large volumes of highly heated gases which exert pressures in the surrounding medium. The term applies to materials that detonate or deflagrate.

prime: To place a detonator or detonating cord into a specially designed explosive material for the purpose of creating an explosion that will be transferred to an equal or less sensitive explosive.

detonating cord: a flexible cord containing a center core of high explosive and used to initiate other explosives

detonator: any device containing any initiating or primary explosive that is used for initiating a detonation.

safety fuse: a flexible cord containing an internal burning medium by which fire or flame is conveyed at a continuous and uniform rate from the point of ignition to the point of use, usually a fuse detonator

electro-explosive device: any of a variety of initiators that are

Filament shunts, clips, or other short-circuiting devices being used will not be removed except during continuity testing and when the explosive ordnance device is ready for immediate activation.

No more than two pounds of explosives will be detonated at any one time. This is due to the length of the firing line. The total amount of explosives detonated will be limited by conditions of the Permit.

Specific Non-Electric Firing System Safety

Before each treatment event, a timed test burn will be performed on 3-feet of safety fuse. This will help to estimate a reasonable time that can be expected after ignition of the fuse. A minimum of 3-feet of safety fuse will be used to prime all treatable quantities of explosives.

Fuse caps will always be inspected to assure that they are free of debris before they are attached to safety fuse.
All safety fuse will be cleanly out and at right angle to the length of the fuse.

Only approved tools will be used to cut and crimp fuse caps to the safety fuse and the initiating source.

Specific Electric Firing System Safety

Serviceability of electro-explosive devices will be checked prior to their being connected to a electrical circuit. The check will include continuity and resistance.

US Mine Safety Health Administration (MSHA) power limited devices will be used when checking serviceability of electroexplosive devices. A blasting galvanometer along with a blasting ohmmeter and a blaster's multimeter are typically used for this purpose.

Electro-explosive devices will not be used when electromagnetic hazards exist. All communication equipment and other equipment capable of generating radio frequency energy in excess of 0.01 watts per square centimeter will be analyzed prior to its use at the OD Unit when ordnance items are handled, to ensure the absence of electromagnetic radiation hazards.

Only the person making the final electric connection will be in control of the firing device.

Firing line will be grounded when not in use.
Personnel will be shielded from electro-explosive devices when making serviceability checks.

Operations will cease during the approach and during the event of a rain storm due to the potential for static electricity to cause an undesired ignition of explosives.

Before the electrical connections are made to an ordnance item, an operational check will be made of the circuit to verify that the control circuits to the ordnance are properly safeguarded to prevent premature activation.

Specific Non-Electric Procedures

All necessary materials, including a 2-way radio for communication, will be transported to the OD Unit in a vehicle that is properly equipped and placarded. The OD Unit warning sign, indicating that operations are in progress, will be visible from all access points to the OD Unit during preparation and at the time of treatment. Explosives used in the treatment process will be hand carried from transport vehicles to the detonation trench. Safety fuse will be tested. A 3-foot length@ of fuse will be cut for a test burning. The timed-test burn will be conducted at a minimum distance of 50-feet away from all other explosives.

A counter charge of explosives will be primed with two nonels to satisfy the dual priming requirement. This assembly will be placed on the top of the waste explosives that are being treated. A single firing cap will be crimped to the safety fuse, and the fuse and the cap assembly will be taped to the 2 nonels. The fuse and cap assembly will be used to initiate the nonels, which in turn will detonate a counter charge and the waste explosives.

Check the OD Unit for hazards prior to detonation.
Insure that the detonation area is cleared by visuals inspection and give a vocal warning of the impending detonation.
Fuse lighters will be attached to the safety fuse and then lit.
Ordnance personnel will then retreat to a safe distance until after detonation has been completed, or

In the case of a misfire, a waiting time of at least 30 minutes plus the burning time of the fuse will be observed before approaching the trench. At this time, the cap and fuse assembly and/or the nonels will be replaced and treatment will proceed as specified above.

The OD Unit warning sign, indicating that operations are in progress, will be placed in a position so that the wording is not visible.

All explosives detonated in the OD Unit will be noted in a logbook. The notation will include the listing of the specific explosive and its quantity.

The amount of explosives detonated will be limited by conditions of the Permit.

Specific Electric Procedures

All necessary materials, including a 2-way radio for communication, will be transported to the OD Unit in a vehicle that is properly equipped and placarded. The OD Unit warning sign, indicating that operations are in progress, will be visible from all access points to the OD Unit during preparation and at the time of treatment. Explosives used in the treatment process will be hand carried

from transport vehicles to the detonation trench. A counter charge of explosives will be primed with two nonel to satisfy the dual priming requirement. These will be placed on the top of the waste explosives that: are being treated. One of the ordnance personnel, while shielded, will check serviceability of all electric explosive devices using an MSHA power limited, approved meter.

Five hundred feet of firing line will be extended out from the trench holding the waste explosives. Serviceability of the firing line will be checked.

One of the ordnance personnel will guard that end of the firing line from which the initiating current originates, keeping it grounded while the ordnance personnel initiating the detonation connects the electro-explosive device to the line at the trench. The electro-explosive device is taped to the 2 nonels.

The OD Unit will be checked for hazards prior to initiating the detonation. The ordnance personnel who will set-off the detonation returns to the end of the firing line, away from the explosives. This location is judged to be a safe distance for the amount of explosives being detonated. The ordnance personnel will insure that the detonation area is cleared by visual inspection and give a vocal warning of the impending detonation.

The ordnance personnel setting-off the detonation will then connect the firing device to the firing line and the electrical ground will be disconnected. The line will then be charged for the detonation.

In the case of a misfire, a waiting time of 30 minutes (plus the burning time of the fuse in cases where a fuse is present) will be observed before approaching the trench. At this time, the electro-explosive device and/or the nonels will be replaced and treatment will proceed as specified above.

The OD Unit warning sign, indicating that operations are in progress, will be placed in a down position so that the wording is no longer visible. This is done at the completion of a treatment session.

All explosives detonated in the OD Unit will be noted in a logbook. The notation will include the listing of the specific explosive along with quantities.

PERMIT ATTACHMENT V-4
SAMPLING AND ANALYSIS PLAN FOR SOIL AT THE OPEN DETONATION UNIT

Introduction

The following is a plan to monitor WSTF's Open Detonation (OD) Unit for potential contamination resulting from waste ordnance treatment. This Plan establishes the soil sampling and analysis procedures that will be conducted for the OD Unit.

Soil samples have been obtained from nearby soils to provide historical background data.

The OD Unit is a fenced section of the 700 Area solid waste landfill and contains a trench which is used to detonate waste and surplus explosives. The maximum permitted operating capacity is 350 pounds per year. Historically, greater than 80 percent of the total weight of explosives have consisted of pentaerythritol tetranitrate (PETN) and trinitrotoluene (TNT), and the actual quantity has ranged from 10.5 lb to 177 lb per year. The variety and quantity of explosives permitted to be treated in the Unit are identified in Module V, Table V-1.

Sample Parameters

Soil samples will be analyzed for Explosive Residues by EPA Method 8330 and Total Metals by EPA Methods 6010 and 7740. EPA Method 8330 is used for the detection of organic constituents in explosive formulations. The Total Metals analysis is for metals commonly found in explosive formulations, casings, and platings.

Sampling Methodology

Open Detonation Unit Sampling

Surface and subsurface soil samples will be collected annually (if OD operations are performed between sampling events) until closure of the OD Unit. To ensure that adequate data are obtained during periods of inactivity, sampling will be performed at least every two years until closure of the OD Unit.

1. Scoop samples, in accordance with the procedures in EPA publication 600/1-84-076-2.2.1, will be obtained from two locations within the OD Unit and will be analyzed for both Explosive Residues and Total Metals. One sample will be obtained from the trench wall and one sample from the trench bottom.

2. Auger samples, in accordance with the procedures in EPA publication 600/1-84-076-2.2.2, will be taken from four separate locations beneath the trench bottom. These samples will be taken at a depth of approximately 2 feet and will be noncomposite. If rocks are encountered limiting the depth of the Auger, the first foot of soil will be removed with a shovel (scoop), and the final depth will be obtained using the auger. All soils removed prior to sampling will be contained and returned to their original location in the pit.

Sample Analyses

Total Metals

The Total Metals by EPA Method 6010 will include the detection of arsenic, barium, cadmium, chromium, lead, and silver. EPA Method 7740 will be used for the detection of selenium.

WSTF will sample the OD Unit trench by the frequencies stated above. The analytical results for total metals samples will be compared to the limits provided in Table-4-1. The limit values provided in this Table are representative of concentrations established at 75 % of EPA's most current health-based action levels for each of the metals. The source for each of the EPA action levels is provided.

TABLE-4-1 - LIMIT VALUES

Metal	As	Ba	Cd	Cr	Pb	Se	Ag
Action Level mg/kg	80	4,000	40	400	500	400	200
Source	1	1	1	1	2	3	1
Limit	60	3,000	30	300	375	300	150

1 Proposed Rule - Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities, Appendix A, Federal Register/Vol. 55, No. 145, July 27, 1990.

2 OSWER Directive 9355.4-02, EPA Memorandum, Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites, December 8, 1989.

3 Calculated value obtained using a RfD of 0.005 mg/kg/day from the IRIS database and calculations provided in Proposed Rule - Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities, Appendices D and E, Federal Register/Vol. 55, No. 145, page 30870, July 27, 1990.

If a statistical evaluation of metals data indicates that five percent or more of the measurements are expected to exceed the limits presented in Table-4-1, NASA will report the finding to the Secretary within 15 day of NASA's receipt of laboratory results. A second sampling will be performed within working 15 days of notification of the Secretary. The results of the second sampling and the statistical evaluation will be provided to the Secretary within 15 working days of receipt of the laboratory results.

The statistical analysis to be applied by NASA to analytical data is the tolerance interval procedure described in Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Draft Addendum to Interim Final Guidance (pages 51 to 56) and Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance (pages 6-11 to 6-15). This technique will be used to compare semi-annual and annual data to the limits presented in Table-4-1. The upper level of the

interval will be compared to the action level for each metal. If the upper limit exceeds the limit value the Secretary will be notified within 15 working days of receipt of the analytical results.

This method is used to calculate an interval that contains a specified fraction of the concentration measurements with a specified degree of confidence. NASA proposes a 95 percent average coverage with a 95 percent confidence.

Explosive Residues (EPA Method 8330)

Sampling and analysis will be done for TNT (trinitrotoluene), RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine), HMX (octahydro-1,3,5,7-tetranitro-1,3,5,7-tetracozine), plus the detection of PETN (pentaerythritol tetranitrate).

If the Explosive Residues analysis indicates reportable values for any constituents, NASA will report the finding to the Secretary within 15 working days of NASA's receipt of laboratory results. A second sampling will be performed within 15 working days of the notification of the Secretary. NASA willl provide the results of the second sampling to the Secretary within 15 working days of receipt of laboratory results.

Recordkeeping

All sampling results will be maintained in the contractor's environmental office. The following information will be maintained for each sampling event:

1. Detailed QA/QC review;

2. Raw data sheets from the laboratory, as well as summary sheets or tables;

3. Sampling notes depicting field observations, all specific sampling locations, and sampling methodology; and,

4. Statistical evaluations of the analytical results will be performed.

Reporting

If explosive residues are detected by EPA Method 8330 or if statistical calculations determine that five percent or more of a metal's measurements are expected to exceed the limits presented in Table-4-1, WSTF will report the findings to the NMED Secretary within 15 working days of receipt of laboratory results. If the initial monitoring results are verified by resampling and analysis, WSTF will notify the Secretary within 15 working days of receipt of the laboratory results.

shall request a Permit Modification identifying the changes.

Table VI-1. **Permitted Waste for the Waste Fuel Treatment Unit**

Description of Hazardous Waste	EPA Waste Code Number	Annual Allowable Quantity
Hydrazines (diluted with at least 90% water)		36,500 Gallons
Hydrazine	U133	
Monomethylhydrazine	P068	
1,1-dimethylhydrazine (unsymmetrical hydrazine)	U098	
1,2-dimethyl hydrazine (symmetrical dimethylhydrazine)	U099	

The total allowable quantity of 36,500 gallons is the amount that will pass through the two 4,000 gallon capacity tanks in any one calendar year.

I.B.2. The Permittee is prohibited from storing or treating hazardous waste that is not identified in Permit Condition VI.B.1.

VI.C. INTEGRITY ASSESSMENTS

The Permittee has provided a preliminary written assessment of the design (Permit Attachment VI-2), reviewed and certified by an independent, qualified registered professional engineer, attesting that the Waste Fuel Treatment Unit tanks will have sufficient structural integrity and will be acceptable for treating hazardous waste as described in Permit Attachment VI-2 and as required by HWMR-6, Part V, § 264.192. A final construction inspection assessment is required prior to the unit being operated in accordance with Permit Condition VI.K.

VI.D. SECONDARY CONTAINMENT

The Permittee has designed and will be operating the secondary containment system for the Waste Fuel Treatment Unit, in order to prevent the release of hazardous constituents into the environment as required by HWMR-6, Part V, S 264.193.

VI.E. OPERATING REQUIREMENTS

VI.E.1. The Permittee shall not place hazardous wastes or treatment reagents in the tank system if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail in accordance with HWMR-6, Part V, § 264.194(a).

VI.E.2. The Permittee shall prevent spills and overflows from the tank or containment systems using the method described in Permit Attachment VI-1 and in accordance with HWMR-6, Part V, § 264.194(b).

VI.F. RESPONSE TO LEAKS OR SPILLS

In the event of a leak or a spill from the tank system, from the secondary containment system, or if a system becomes unfit for continued use, the Permittee shall remove the system from service immediately and complete the following actions as required by HWMR-6, Part V, § 264.196(a)-(f):

VI.F.1. Stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

VI.F.2. Remove waste and accumulated precipitation from the system within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Secretary and demonstrate that the longer time period is required.

If the collected material is a RCRA hazardous waste, it must be managed in accordance with all applicable requirements of HWMR-6, Parts III-V. The Permittee shall note that@ if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 CFR Part 302.

VI.F.3. Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any

visible contamination of the soil or surface water.

VI.F.4. Close the system in accordance with the Closure Plan, Permit Attachment II-7, unless the following actions are taken:

VI.F.4.a. For a release caused by a spill that has hot damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.

VI.F.4.b. For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee shall repair the primary system prior to returning it to service.

VI.F.4.c. If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in HWMR-6, Part V, §§ 264.192 and 264.193.

VI.F.5. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault.

VI.G. INSPECTION SCHEDULES AND PROCEDURES

VI.G.1. The Permittee shall inspect the tank systems, in accordance with the Inspection Schedule, Permit Attachment II-3, and shall complete the items in Permit Conditions VI.G.2. and VI.G.3. as part of those inspections.

VI.G.2. The Permittee shall inspect the overfill controls, in accordance with the schedule in Permit Attachment II-3 and as required by HWMR-6, Part V, 264.195(a).

VI.G.3. The Permittee shall inspect the following components of the tank system once each operating day in accordance with HWMR-6, Part V, § 264.195(b).

VI.G.3.a. Above ground portions of the tank system, to detect corrosion or releases of waste;

VI.G.3.b. Monitoring and leak detection aspects (e.g., in-line pressure or flow metering gauges, liquid staining) to ensure that the tank system is being operated according to its design;

VI.G.3.c. Construction materials and the area immediately surrounding the externally accessible portion of the tank unit, including the secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

VI.G.4. The Permittee shall document compliance with Permit Conditions VI.G.2. through VI.G.3. and place this documentation in the operating record for the facility in accordance with HWMR-6, Part V, § 264.195(d).

VI.H. RECORDKEEPING AND REPORTING

VI.H.1. The Permittee shall report to the Secretary,, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment as required by HWMR-6, Part V, § 264.196(d)(1). A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned-up, need not be reported as stated in HWMR-6, Part V, § 264.196(d)(2). Releases that are contained within a secondary containment system need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, requirements of this Permit Condition will have been satisfied as provided in HWMR-6, Part V, § 264.196(d)(1).

VI.H.2. Within 30 days of detecting a release to the environment from the tank system or secondary containment system, the Permittee shall report the following information to the Secretary as required by HWMR-6, Part V, § 264.196(d)(3):

a. Likely route of migration of the release;

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NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
1	**Module I**	M-I-8	I.E.14.d.	Change "pages II-23 and II-24" to "pages II-23"	1	A.1
2	"	M-I-9	I.E.16.	Delete recurrent phrase "...a permit application or in any report to the"	1	A.2
3	"	M-I-10	I.I.	Delete compliance items 5 through 8; items were submitted on 2/23/95 and approved by NMED.	1	A.1
4	**Module II**	M-II-3	II.I.2.	Change "Part V §264.33" to "Part V, §264.33".	1	A.1
5	Waste Analysis Plan	PA-II-1-1	Introduc-tion	Change "Environmental contractor" to "contractor Environmental Department".	1	A.1
6	"	PA-II-1-1	"	Change "Chemistry contractor" to "contractor Environmental Department".	1	A.1
7	"	PA-II-1-1	Generator Supplied Info.	Change "Environmental contractor" to "contractor Environmental Department".	1	A.1
8	"	PA-II-1-2	Table II-1-1	Change "SW-846 1010" to "SW-846 1010[1]". Change "SW-846 9040" to "SW-846 9040[1]". Change "ASTM**D891-86" to "ASTM**D891[1]-86". Add footnote "[1]Analysis to be performed by this method or an equivalent SW-846 method."	1	B.1.a
8.1	"	PA-II-1-2	Generator Supplied Info.	Change "...on site laboratory then performs or facilitates" to "...contractor Environmental Department then coordinates"	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
9	Waste Analysis Plan	PA-II-1-3	Container Storage Unit	Change "WSTF Environmental Section personnel will sample all containerized liquids stored in the Container Storage Unit on at least an annual basis." to "The WSTF contractor Environmental Department will insure that sampling and analyses of all containerized liquids stored in the Container Storage Unit occurs on an annual basis."	1	A.1
10	"	PA-II-1-3	Evapora-tion Tank Unit	Change "Environmental Section" to "contractor Environmental Department".	1	A.1
10.1	"	PA-II-1-3	"	Change "...personnel will sample the evaporation tanks and the drain line sump for parameters..." to "...personnel will sample the evaporation tanks for parameters...".	1	B.1.a
10.2	"	PA-II-1-3	"	Delete reference to "II-1-2c".	1	A.1
10.3	"	PA-II-1-3	"	Change "...(See Permit Attachment IV-4)." to "...(See Permit Attachment IV-4) and in accordance with the requirements of 40 CFR part 264 subpart CC, when effective."	1	B.1.a
10.4	"	PA-II-1-3	"	Change "Environmental Section" to "contractor Environmental Department".	1	A.1
11	"	PA-II-1-3	Table II-1-2a	Add two (2) footnotes: "[1]Analysis to be performed by this method or an equivalent SW-846 method." and "***Determination of Propellant Hydrazines in Aqueous solution using High Performance Liquid Chromatography with Amperometric Detection (White Sands Test Facility Job Instructions)."	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
12	"	PA-II-1-3	"	Change "Monthly" to "Semiannually".	[1]1	B.1.c
13	Waste Analysis Plan	PA-II-1-3	Table II-1-2a	Change "WSTF LJI-320-31-173*" to "WSTF LJI-320-31-173* or WSTF LJI-320-31-210***".	[1]1	B.1.c
14	"	PA-II-1-3	"	Delete the Parameter, Frequency and Method entries for "flash point".	[1]1	B.1.c
15	"	PA-II-1-4	Table II-1-2b	Delete the Parameter, Frequency and Method entry for "flash point".	[1]1	B.1.c
15.1	"	PA-II-1-4	"	Add footnote: "[1]Analysis to be performed by this method or an equivalent SW-846 method."	1	A.1
16	"	PA-II-1-4	Table II-1-2c	Delete Table II-1-2c "Drain Line Sump. Analytical Data for all Phases".	[1]1	B.1.c
17	"	PA-II-1-5	Table II-1-2d	Change "Table II-1-2d Evaporation Tanks and Drain Line Sump Sampling Rationale" to "Table II-1-2d Evaporation Tanks Sampling Rationale".	[1]1	B.1.c
18.1	"	PA-II-1-6	Evapora-tion Tank Unit	¶1 change "...from the evaporation tanks and the drain line sump conform to..." to "...from the evaporation tanks conform to...".	[1]1	B.1.c
18.2	"	"	"	¶1 delete sentence numbers 2 and 3: "Details of the sampling and analysis plan for the sump are provided in Permit Attachment IV-4. The technique for sampling the evaporation tanks will be identical to that of the drain line sump."	[1]1	B.1.c

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
18.3	"	"	"	¶1 sentence #4 change "sump" to "evaporation tank".	[1]1	B.1.c
18.4	"	"	"	¶1 sentence #4 delete wording "dedicated teflon bailer".	[1]1	B.1.c
18.5	Waste Analysis Plan	PA-II-1-6	Evaporation Tank Unit	¶1 sentence #5 delete wording "For the evaporation tanks, a" and is used to collect waste media".	[1]1	B.1.c
18.6	"	"	"	¶1 sentence #6 change "Both" to "This"; change "devices" to "device".	[1]1	B.1.c
18.7	"	PA-II-1-6	Evaporation Tank Unit	¶2 sentence #1 delete wording "either of" and "or the drain line sump".	[1]1	B.1.c
18.8	"	"	"	¶2 sentence #2 change "Environmental Section" to "contractor Environmental Department".	1	A.1
18.9	"	"	"	¶2 delete sentence #3 and #4.	[1]1	B.1.c
18.10	"	PA-II-1-6	Evaporation Tank Unit	Add paragraph #3.	[1]1	B.1.c
19.1	"	PA-II-1-6	Open Detonation Unit	¶1 change "Environmental Section" to "contractor Environmental Department".	1	A.1
19.2	"	PA-II-1-6	"	¶2 revise wording of the sampling at the Open Detonation Unit.	2	B.1.d

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
20.1	"	PA-II-1-7	Table II-1-3	Change "...chromium, lead, 6010/7740 silver and selenium which are constituents..." to "...chromium, lead, silver and selenium within the OD Unit. These are possible constituents...".	1	A.1
20.2	"	"	"	Change "SW-846" to "SW-846[1] 6010 and 7740".	1	A.1
20.3	"	"	"	Change "SW-846" to "SW-846[1] 8330".	1	A.1
20.4	Waste Analysis Plan	PA-II-1-7	Table II-1-3	Add footnote "[1]Analysis to be performed by this method or an equivalent SW-846 method."	1	A.1
21	"	"	Waste Fuel Treatment Unit	Section is revised for clarification.	[1]1	B.1.c
22	"	PA-II-1-8	Table II-1-4	Table is revised for clarification. Add optional analytical method "Hydrazines by High Pressure Liquid Chromatography WSTF LJI-320-31-210".	[1]1	B.1.c
23	"	"	Quality Assurance /Quality Control Program	¶2 change "Environmental Section" to "contractor Environmental Department". ¶3 is revised for clarification.	1	A.1
24	"	PA-II-1-10	Chain of Custody	¶2 is revised for clarification. ¶3 is deleted for clarification. ¶4 is revised for clarification.	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
25	Inspection Plan	PA-II-3-1	Introduc-tion	Change "Environmental Section" to "contractor Environmental Department".	1	A.1
26	"	"	Electric-al Main-tenance	¶1 sentence #1 add "and the contractor Environmental Department". ¶1 sentence #3 add "or contractor Environmental Department".	1	A.1
27	"	PA-II-3-2	Hazardous Waste Manage-ment Unit	¶1 change "the Defense Contract Management Command (DMC) group." to "contractor Environmental Department personnel." ¶2 change "Environmental Section" to "contractor Environmental Department". ¶3 change "office records" to "contractor Quality Assurance/Quality Control records".	1	A.1
28	Inspection Plan	PA-II-3-3	Table II-3-1	Parameter column: change "Freeboard maintained" to "Freeboard". Frequency column: change "Daily" to "Every Operating Day". Method column: change "Adequate freeboard will be" to "Adequate freeboard will be maintained.".	2	B.4
29	Inspection Plan	PA-II-3-4	Table II-3-2	Frequency column: change "Daily" to "Every Operating Day".	2	B.4
30	"	PA-II-3-5	Table II-3-3	Frequency column: change "Daily" to "Every Operating Day".	2	B.4
31	Training Plan	PA-II-4-1	Introduc-tion	Change "Section" to "Department".	1	A.1
32	"	PA-II-4-3	Training Module #1	III.D. change "Section" to "Department".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
33	"	PA-II-4-5	Training Module #3	I. change "Section" to "Department".	1	A.1
34	"	"	"	II.B.1.a. change "Section" to "Department".	1	A.1
35	"	"	"	II.B.1.b. change "Section" to "Department".	1	A.1
36	"	PA-II-4-6	"	II.B.2.b. change "Section" to "Department".	1	A.1
37	"	"	"	II.C. Freon Control: delete section.	2	B.5.a
38	"	PA-II-4-7	"	Change "II.D. Hazardous Waste Collection" to "II.C. Hazardous Waste Collection". Change "II.E. Disposal of Spent Batteries" to "II.D. Disposal of Spent Batteries".	1	A.1
39	"	"	"	II.D.2.d. add "/for recycle".	1	A.1
40	Training Plan	PA-II-4-7	Training Module #3	II.D.2.e.ii.(b) add "/recycle"	1	A.1
41	"	"	"	II.D.2.f. add "/neutralization".	1	A.1
42	"	PA-II-4-8	Training Module #3	II.D.2.h. change "Section" to "Department".	1	A.1
43	"	"	"	Change "II.F. Collection and Disposal of Used Oil" to "II.E. Collection and Disposal of Used Oil".	1	A.1
44	"	"	"	II.E.2.d. change "Section" to "Department".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
45	"	PA-II-4-9	"	II.G.2.b. change "Section" to "Department".	1	A.1
46	"	"	"	II.G.2.d. change "may" to "must"; change "Section" to "Department".	1	A.1
47	"	"	"	Add section: "II.H.2. Summary (a. through d.)".	1	A.1
48	"	"	Training Module #4	II.A. change "Environmental Emergency Coordinator (EEC)" to "Emergency Response Coordinator".	1	A.1
49	"	"	"	Delete: "II.A.2. Assist Area Environmental Coordinator".	1	A.1
50	"	"	"	Delete: "II.A.3. Provide regulatory guidance in emergencies to Area Environmental Coordinators".	1	A.1
51	"	"	"	Change "II.A.4." to "II.A.2.".	1	A.1
52	"	"	"	II.B. change "Area Environmental Coordinator (AENC)" to "Incident Commander".	1	A.1
53	Training Plan	PA-II-4-9	Training Module #4	Add section: "II.C. Environmental Program Manager".	1	A.1
54	"	PA-II-4-11	Training Module #5	II.B.1. change "outdoor with sump" to "LABCON Highbay".	1	A.1
55	"	"	"	Add to section II. "E. Prep Lab".	1	A.1
56	"	"	"	Add to section II. "F. 800 Decon Station".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
57	"	"	"	Add to section II. "G. Etch Lab".	1	A.1
58	"	"	"	Add to section II. "H. Photo Lab".	1	A.1
59	"	"	"	Add to section II. "I. Environmental Department".	1	A.1
60	"	"	"	III.A. change "Quality Assurance, Reliability and Safety Office (QARSO)" to "the contractor Environmental Department".	1	A.1
61	"	"	"	III.B.1. change "Section" to "Department".	1	A.1
62	"	PA-II-4-12	"	Delete section: "IV.B. Log all operations on drain lines".	1	B.5.b
63	"	"	"	Change "IV.C." to "IV.B.".	1	A.1
64	"	PA-II-4-13	Training Module #6	Delete "II.A. SCAPE".	1	A.1
65	"	"	"	II.B. change: "II.B. Totally Encapsulated Suits" to "II.A. Totally Encapsulated Suits (ILC)".	1	A.1
66	"	"	"	Change "II.C." to "II.B.".	1	A.1
67	Training Plan	PA-II-4-13	Training Module #6	Delete section: "III.E. Ozonation Facility".	1	B.5.b

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
68	"	PA-II-4-14	Training Module #7	II.D.2.b. change: "All inspected by hazardous waste inspectors" to "Movement supervised by contractor Environmental Department trained hazardous waste handlers".	1	A.1
69	"	"	"	Delete section: "III.C.2. Notify Quality Assurance Office".	1	A.1
70	"	"	"	Change "III.C.3." to "III.C.2.".	1	A.1
71	"	PA-II-4-15	"	Change "III.C.4. Radio contact required during operation" to "III.C.3. Radio contact or 2 man communication required during operation".	1	A.1
72	"	"	"	Change "III.C.5." to "III.C.4.".	1	A.1
73	"	"	"	Change "III.C.6." to "III.C.5.".	1	A.1
74	"	"	"	Change "III.C.7. Turn logbook for container into WSTF contractor Environmental Section" to "III.C.6. Turn logbook for container into WSTF contractor Environmental Department".	1	A.1
75	"	"	Training Module #8	IV.A. change "Section" to "Department".	1	A.1
76	"	"	"	IV.B. change "Department" to "Section".	1	A.1
77	"	PA-II-4-16	Training Module #9	Delete section: "III.F. QA/QC Program".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
78	Training Plan	PA-II-4-17	Training Module #9	Change "NASA Environmental Program Manager (EPM)" to "NASA Environmental Program Manager".	1	A.1
79	"	PA-II-4-18	"	Change "Environmental Emergency Coordinator (EEC)" to "Emergency Response Coordinator".	1	A.1
80	"	"	"	Responsibilities 1): change "WSTF Environmental Emergency Coordinator" to "WSTF Emergency Response Coordinator".	1	A.1
81	"	PA-II-4-19	"	Minimum Training Requirements: change "and additional" to "or a".	1	A.1
82	"	"	"	Delete section: "Area Environmental Coordinator (AENC)".	1	B.5.b.
83	"	"	"	Change "Environmental Section Supervisor (Support Contractor)" to "Environmental Department Manager (Support Contractor)".	1	A.1
84	"	PA-II-4-21	"	Environmental Engineer/Scientist, Responsibilities 1): change "Section supervisor" to "Department Manager".	1	A.1
85	"	"	"	Environmental Engineer/Scientist, Responsibilities 2): change "Section supervisor" to "Department Manager".	1	A.1
86	"	"	"	Delete section: "Hypergolic Propellant Hazardous Waste Handler".	1	B.5.b

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
87	"	PA-II-4-22	"	Hazardous Waste Handler, Minimum Training Requirements: add Training Modules "#5, #6".	1	B.5.b
88	"	PA-II-4-24	"	Delete section: "Hazardous Waste Spill Responder".	1	B.5.b
89	Training Plan	PA-II-4-24	Training Module #9	Delete section: "Hazardous Waste Inspector".	1	B.5.b
90	Incompatible Reactive & Ignitable	PA-II-5-1	Container Storage	¶1 change "The Container Storage Unit is a new building which will not be used for hazardous waste storage until the permit is in effect." to "The Container Storage Unit has been operating since the effective date of the permit."	1	A.1
91	"	PA-II-5-2	Evaporation Tank Unit	¶3 add "volatile organic concentration".	1	A.1
92	Contingency Plan	PA-II-6-1	Table of Contents	Introduction delete: "Organization and Duties" and "Coordinated Emergency Services". Introduction add: "Operations" and "Personnel Roles and Lines of Authority".	1	A.1
93	"	PA-II-6-2	Introduction	Definitions delete: "Emergency response Team- A team made up of on site personnel who have been trained in emergency response."	1	A.1
94	"	"	"	Definitions add : "Hazardous Materials (HAZMAT) Response Team- A team made up of on site personnel who have been trained in emergency response."	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
95	"	"	"	Definitions add: "Incident Command System (ICS)- The command system based on a nationally recognized system for managing critical situations, which includes the following characteristics: (1) common organizational structure; (2) common terminology; (3) uniform and consistent procedures; and (4) coordinated communications."	1	A.1
96	Contingency Plan	PA-II-6-3	Introduc-tion	Definitions add to definition of Release: "a) Emergency Release- A release of a hazardous substance that occurs outside of WSTF controlled work areas, or within WSTF controlled work areas, goes beyond the scope of the local area emergency procedures, controls, or resources."	1	A.1
97	"	"	"	Definitions add to definition of Release: "b) Incidental Release- A release of a substance that can be handled within the scope of the local area emergency procedures, controls, and resources."	1	A.1
98	"	"	"	"Operations": add new section.	2	B.6.a
99	"	"	"	Spill Response Team: delete this section.	1	A.1
100	"	"	"	Responsibilities: delete ¶2 "Emergency Coordinator (EC)"; ¶3 "Environmental Program Manager (EPM); ¶4 "Area Environmental Coordinator (AeNC)"; and ¶5. Add: "¶a. through ¶q.".	2	B.6.a

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
101	"	PA-II-6-4 PA-II-6-5	"	Table II-6-1: change "Emergency Coordinators List" to "Emergency Response Coordinators List". Change "Emergency Coordinator (EC)" to "Emergency Response Coordinator (ERC)". Revise listing of ERC's. Delete "Second Alternate" in Environmental Program Manager (EPM) section. Delete: "Area Environmental Coordinator (AeNC) section". Add: "Incident Commander" section.	1	B.6.d
102	"	PA-II-6-5	"	Organization and Duties: delete this section.	2	B.6.a
103	Contingency Plan	PA-II-6-5	"	"Personnel Roles and Lines of Authority": add new section.	2	B.6.a
104	"	"	"	Coordinated Emergency Services: delete this section.	2	B.6.a
105	"	"	Introduc-tion	Training: revise this section for clarification.	1	B.5.b
106	"	"	"	Contingency Plan Distribution: change "Section" to "Department".	1	A.1
107	"	PA-II-6-6	"	Amendment of Plan: change "EC" to "ERC".	1	A.1
108	"	PA-II-6-7	Prepared-ness and Preven-tion	External Communications and Alarm Equipment: ¶2 change "Building 112" to "Building 104".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
109	"	"	"	External Communications and Alarm Equipment: ¶3 change "...Unit, in every occupied building, and in marked boxes along the access road." to "...Unit and in all occupied buildings."	1	A.1
110	"	PA-II-6-8	"	Fire Control Equipment and Procedures: ¶2 change "500" to "from 400 to 750".	1	A.1
111	"	"	"	Fire Control Equipment and Procedures: ¶2 change "750" to "1000".	1	A.1
112	"	"	"	Fire Control Equipment and Procedures: ¶2 change "1,000" to "750".	1	A.1
113	"	"	"	Spill Control and Equipment: ¶1 change "...a spill response team, which is provided by the Environmental Section,..." to "...a hazardous materials (HAZMAT) response team..."	1	A.1
114	"	PA-II-6-9	"	Table II-6-2: change "Emergency Response Materials" to "Emergency Response Equipment"; revise entire table.	1	B.6.b
115	Contingency Plan	PA-II-6-11	Preparedness and Prevention	Decontamination of Equipment: change "on the 'clean pad'" to "in the LABCON Highbay".	1	A.1
116	"	"	"	Arrangements with Local Authorities, Agreements: change "Memorial General Hospital" to "Memorial Medical Center".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
117	"	PA-II-6-12	Emergency Procedures	General: ¶1 change "(Emergency Center, dial 5111)" to "(Emergency Center, dial 5911 or 5111)".	1	B.6.d
118	"	"	"	General: ¶5 change "EC" to "IC".	1	A.1
119	"	"	"	Emergency Phone Numbers: change "Memorial General Hospital" to "Memorial Medical Center".	1	A.1
120	"	PA-II-6-13	"	General: ¶1 change "EC" to "IC"; change "AENC" to "ERC".	1	A.1
121	"	"	"	General: ¶2 change "EC" to "IC"; delete "and the AENC,".	1	A.1
122	"	"	"	General: ¶3 change "EC" to "IC"; delete "and the AENC,"; change "a command" to "an incident command".	1	A.1
123	"	"	"	General: ¶4 change "EC" to "IC".	1	A.1
124	"	PA-II-6-14	"	General: ¶4 change "EC" to "IC"; change "AENC" to "EPM".	1	A.1
125	"	"	Emergency Procedures	Releases From Permitted Hazardous Waste Units, Evaporation Tanks: ¶1 change "EC" to "EPM"; change "human health and the environment as previously described." to "human health and the environment."	1	A.1
126	Contingency Plan	PA-II-6-15	Emergency Procedures	Releases From Permitted Hazardous Waste Units, Hazardous Waste Drain Lines and Drain Line Sump: ¶1 change "EC" to "EPM"; ¶2 change "EC" to "EPM".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
127	"	"	"	Releases From Permitted Hazardous Waste Units, Container Storage Unit: change "sill" to "will"; change "EC" to "EPM".	1	A.1
128	"	PA-II-6-16	"	Releases From Permitted Hazardous Waste Units, Container Storage Unit: change "EC" to "EPM".	1	A.1
129	"	"	"	Releases From Permitted Hazardous Waste Units, Open Detonation Unit: change "Open Detonation Unit (OD)" to "Open Detonation Unit (ODU)".	1	A.1
130	"	PA-II-6-17	"	Releases From Permitted Hazardous Waste Units, Waste Fuel Treatment Unit: ¶1 change "EC" to "ERC"; ¶2 change "EC" to "EPM".	1	A.1
131	"	"	Emergency Proce-dures	Soil Assessment and Clean-Up Procedures: ¶1 change "AENC" to "EPM"; change "AENC" to "IC".	1	A.1
132	"	PA-II-6-18	"	Soil Assessment and Clean-Up Procedures: ¶3 change "AENC" to "EPM".	1	A.1
133	"	"	Emergency Proce-dures	Fires and Explosions: ¶1 change "EC" to "ERC".	1	A.1
134	"	"	"	Fires and Explosions: ¶1 delete "...and the appropriate AENC of the Area in which the emergency exists."	1	A.1
135	"	"	"	Fires and Explosions: ¶1 change "Fire Department" to "HAZMAT Emergency Response Team".	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
136	Contingency Plan	PA-II-6-18	Emergency Procedures	Fires and Explosions: ¶1 change "Fire Department Chief" to "Incident Commander".	1	A.1
137	"	"	"	Fires and Explosions: ¶1 delete "...the command of".	1	A.1
138	"	"	"	Fires and Explosions: ¶2 change "EC" to "IC".	1	A.1
139	"	PA-II-6-19	"	Fires and Explosions: ¶1, ¶3, ¶4 & ¶5, change "EC" to "IC".	1	A.1
140	"	"	"	Fires and Explosions: ¶4 change "The initial evacuation will be..." to "The initial evacuation perimeter will be...".	1	A.1
141	"	"	"	Fires and Explosions: ¶4 change "...h mile downwind from the effected area." to "...2000 ft. from the effected area.".	2	B.6.a
142	"	"	"	Fires and Explosions: ¶5 change "...; SCAPE suit (self-contained atmospheric protective ensemble." to "...; ILC suit.".	2	B.6.a
143	"	PA-II-6-20	Emergency Procedures	Containment Activities: ¶1 add "(Level II)".	1	A.1
144	"	"	Emergency Procedures	Decontamination Procedures: ¶3 change "...by the WSTF Quality Assurance, Reliability Safety Office." to "...by the WSTF Cleaning Facility."	1	B.6.b

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
145	"	"	"	Decontamination Procedures: ¶4 change "clean pad" to "LabCon Highbay".	1	B.6.b
146	Closure Plans For Permitted Units	PA-II-7-3	Open Detonation Unit	¶2 change "Recent annual sampling of the unit and background has not exceeded Toxic Characteristic Leaching Procedure limits for organic explosive residues or associated heavy metals. Future monitoring will be conducted for total organic explosive residues and total heavy metals associated with the permitted explosives." to "Soil sampling of this unit for organic explosive residues or associated heavy metals has been performed since December, 1989. Monitoring will be continued for total organic explosive residues and total metals until closure."	1	A.1
147	"	"	"	¶3 change "...that exceed background quantities," to "...that exceed quantities allowed by this Permit,".	1	A.1
148	Hazardous Waste Permit Application Part A	PA-II-8-7	XIV. Description of Hazardous Wastes	Line Number 5: add "D005 4 T S01 T01". Line Number 8: add "D008 6 T S01 T01". Line Number 9: add "D009 1.2 T S01 T01".	1	A.1
149	"	PA-II-8-8	"	Line Number 34: add "D010 10 P S01 T01".	1	A.1
150	"	PA-II-8-18	Table A-1	Add: "D005 4(T) 2(T) 2(T) N/A N/A".	1	A.1

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151	"	PA-II-8-19 & PA-II-8-20	Table A-2	WSTF Individual Waste Profile Sheets (WIWPS), delete #s: 20-01-05 20-03-02 20-05-04 40-01-44 80-02-23 20-01-19 20-03-07 30-01-25 40-02-08 80-04-01 20-01-27 20-04-03 40-01-19 80-02-04	1	A.1
152	"	"	"	WSTF Individual Waste Profile Sheets (WIWPS), add #s: 20-03-25 35-01-07 30-01-33 20-03-28 35-01-14 40-01-47 20-03-31 30-02-01	1	A.1
153	Hazardous Waste Permit Application Part A	PA-II-8-21 & PA-II-8-22	Table A-3	WSTF Individual Waste Profile Sheets (WIWPS), delete #s: 20-01-07 20-04-16 30-01-24 20-01-30 20-08-01 30-02-01 20-04-07 25-02-01 40-01-24	1	A.1
154	"	"	"	WSTF Individual Waste Profile Sheets (WIWPS), add #s: 30-01-36 40-02-07 40-01-42 30-01-06 30-02-06 30-02-18 40-01-07 30-01-29 40-01-48	1	A.1
155	"	"	"	WSTF Individual Waste Profile Sheets (WIWPS), #s: 20-01-33 change "Freon Cont. Soft Goods" to "Contaminated Debris". 27-01-10 change "Foil Prep. Materials" to "Contaminated Debris". 30-01-08 change "Contaminated Soft Goods" to "Fuel Contaminated Soft Goods". 40-02-15 change "40-01-07" to "40-02-15". 40-02-15 change "100" to "200".	1	A.1
156	"	PA-II-8-25 & PA-II-8-26	Table A-5	WSTF Individual Waste Profile Sheets (WIWPS), delete #s: 20-01-05 20-03-02 40-01-19 80-02-23 20-01-19 20-03-07 40-02-08 80-04-01 20-01-27 30-01-25 80-02-04	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
157	"	"	"	WSTF Individual Waste Profile Sheets (WIWPS), add #s: 20-03-25 20-03-28 20-03-31 30-02-01	1	A.1
158	**Module III**	M-III-3	III.F.3.	Change "stores" to "stored".	1	A.2
159	"	PA-III-1-1	Introduc-tion	Change "intent" to "intended".	1	A.2
160	"	PA-III-2-1	Permit Attach-ment III-2	Annually Permitted Waste For The Container Storage Unit: Add Waste Code and Quantity of "D005 2(T)".	2	F.3.b
160.1	**Module III**	PA-III-2-1	Permit Attach-ment III-2	Annually Permitted Waste For The Container Storage Unit: Add "Note 1: In addition to the above waste codes, the permittee may store in quantities up to ten pounds of the waste codes identified in the Part A of Permit Attachment II-8.".	2	F.3.b
161	"	"	"	Annually Permitted Waste For The Container Storage Unit: Delete Waste Code D008 quantity of "1000(P)".	1	A.2
162	"	"	"	Annually Permitted Waste For The Container Storage Unit: Change "Note 1" to "Note 2". Change "Note 2" to "Note 3".	1	A.1
163	**Module IV**	M-IV-2	IV.D.2.	Change "Permit Attachments IV-1 IV-4" to "Permit Attachments IV-1A, IV-1B and IV-1C".	1	A.1
164	"	"	IV.E.1.	Change "...VOC Monitoring Plan." to "...VOC Monitoring Plan and when effective, §264.1083.".	2	G.4

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165	"	"	IV.E.2.	Change "Attachment" to "Attachments".	1	A.1
166	"	"	"	Change "...Permit Attachments II-1." to "...Permit Attachments II-1 and IV-4 and when effective, §264.1083.".	2	G.4
167	"	M-IV-4	IV.G.1.	Change "...from the Evaporation Tank Unit," to "...from the Evaporation Tank Unit in accordance with all applicable requirements of §264 subpart CC,".	2	G.4
168	"	"	IV.G.2. & IV.G.3.	Delete sections IV.G.2. and IV.G.3. for clarification and incorporation of Subpart CC regulations.	2	G.4
169	"	M-IV-7	IV.K.1.	Change "Permit Attachment IV-5" to "Permit Attachment II-5".	1	A.1
170	**Module IV**	M-IV-7	IV.L.1.	Change "Permit Attachment IV-5" to "Permit Attachment II-5".	1	A.1
171	"	PA-IV-1A-1	Permit Attach-ment IV-1A	Introduction: Change "tan" to "tank".	1	A.2
172	"	"	"	Evaporation Tanks: ¶1 Add sentence: "Each tank is equipped with six (6) turbine vents located around the tank wall (Figure IV-1-5). The vents are designed to remove excess air between the carbon steel supporting structure and the liners to minimize liner movement during winds."	2	G.2

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
173	"	"	"	Evaporation Tanks: Change "16" to "10".	1	A.2
174	"	PA-IV-1A-4	"	Drain Line Pipe: Delete ¶2, 3, 6 and 7; add ¶4 and 5. To provide a more accurate description regarding the design of the different drain line pipe sections.	1	A.1
175	"	PA-IV-1A-6	"	Drain Line Pipe: Delete ¶1; add ¶2. To provide a more accurate description regarding the design of the different drain line pipe sections.	1	A.1
176	"	"	"	Drain Line Pipe: ¶3 change "primary drain line pipe" to "drain lines".	1	A.1
177	"	"	"	Drain Line Sump Tank: ¶5 change "7 feet" to "5 feet".	2	G.2
178	"	PA-IV-1B-1	Permit Attach-ment IV-1B	Source and Nature of Waste Streams: Change "...testing, photographic and battery processing." to "...testing and photographic processing."	1	A.1
179	**Module IV**	PA-IV-1B-2	Permit Attach-ment IV-1B	Treatment Process: ¶1 change "weekly" to "monthly".	2	G.4
180	"	"	"	Treatment Process: ¶2, delete sentence 3: "This is typically done on a weekly basis."	2	G.4

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
181	"	"	"	Treatment Process: ¶2, delete sentences 5 and 6: "These devices further trigger an automatic telephone dialer. Environmental personnel and drain line users are automatically notified to apprise them of the situation." ¶2, add sentence 7: "These devices further trigger an automatic telephone dialer that contacts the contractor Environmental Department and WSTF Fire Department."	1	A.1
182	"	PA-IV-1C-1	Permit Attach-ment IV-1C	Introduction: ¶1 change "(Figure IV-1-1)" to "(Figures IV-1-1 and IV-1-2)". ¶1 change "(Figure IV-1-2)" to "(Figure IV-1-3)". ¶1 change "(Figure IV-1-3)" to "(Figure IV-1-4)". ¶3 change "electronic optical sensors" to "electronic sensors".	1	A.1
183	"	PA-IV-1C-2	"	Evaporation Tanks: ¶1 change "(Figure IV-1-1)" to "(Figure IV-1-2)".	1	A.1
184	"	"	"	Evaporation Tanks: ¶1 change "daily" to "every operating day".	2	G.4
185	"	"	"	Drain Line Pipe: Delete ¶2 and 3; add ¶4, 5 and 6. To provide a more accurate description regarding the design of the different drain line pipe sections secondary containment and leak detection.	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
186	**Module IV**	PA-IV-1C-2 & PA-IV-1C-3	Permit Attach-ment IV-1C	Drain Line Sump Tank: ¶2 change "moisture sensor" to "electronic sensor". ¶2, sentence 3 change "When triggered, as a result of detection, the sensor activates the same automatic telephoning device used for the drain line pipe leak detection system." to "When triggered, as a result of detection, the sensor activates an automatic telephoning device that contacts the contractor Environmental Department and WSTF Fire Department."	1	A.1
187	"	PA-IV-2-1	Permit Attach-ment IV-2	Annually Permitted Waste For The Evaporation Tank Unit: Add Waste Code D001 quantity of "20 (T)".	1	A.1
188	"	"	"	Annually Permitted Waste For The Evaporation Tank Unit: Add Waste Codes and Quantities: "D005 2(T)"; "D008 3(T)"; "D009 1(T)"; "D010 10(P)"; "F008 75(P)"; "P082 10(P)".	2	G.5.b
189	"	PA-IV-4-1	Permit Attach-ment IV-4	Volatile Organic Emissions Monitoring Plan, Introduction: Delete ¶1 and 2; Add ¶3. Permit updated to comply with the RCRA Subpart CC air emission regulations.	2	G.4
"	"	PA-IV-4-1 & PA-IV-4-2	"	Volatile Organic Emissions Monitoring Plan, Background: Delete this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"
"	"	PA-IV-4-2	"	Volatile Organic Emissions Monitoring Plan, Test Methods: Delete this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
189 (continued)	**Module IV**	PA-IV-4-2	Permit Attachment IV-4	Volatile Organic Emissions Monitoring Plan, Waste Determinations: Add this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	2	G.4
"	"	PA-IV-4-3 PA-IV-4-4 PA-IV-4-5	"	Volatile Organic Emissions Monitoring Plan, Sample Collection: Delete this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"
"	"	PA-IV-4-3 PA-IV-4-4	"	Volatile Organic Emissions Monitoring Plan, Sample Collection Table 4-1: Delete this table. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"
"	"	PA-IV-4-5 PA-IV-4-6	"	Volatile Organic Emissions Monitoring Plan, Quality Assurance/Quality Control: Delete this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"
"	"	PA-IV-4-6 PA-IV-4-7	"	Volatile Organic Emissions Monitoring Plan, Chain of Custody: Delete this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"
"	"	PA-IV-4-7 PA-IV-4-8	"	Volatile Organic Emissions Monitoring Plan, Equipment Decontamination: Delete this section. Permit updated to comply with the RCRA Subpart CC air emission regulations.	"	"
190	**Module V**	M-V-2	Table V-1	Permitted Wastes for the Open Detonation Unit: Change "Cyclotrimethylane trinitramine" to "Cyclotrimethylene trinitramine".	1	A.2

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
191	"	"	"	Permitted Wastes for the Open Detonation Unit: Change "Cyclotetramethylene tetranitrumina" to "Cyclotetramethylene tetranitramine".	1	A.2
192	**Module V**	M-V-3	V.B.3.	Change "The Permittee is prohibited from treating hazardous waste that is not identified in Permit Condition V.B.2., including shipping and storage containers for the waste explosives." to "The Permittee is prohibited from treating hazardous waste that is not identified in Permit Condition V.B.2., including shipping and storage containers for the waste explosives, except in cases where shipping and storage containers are contaminated with or stained by residues of explosives identified in Permit Condition V.B.2.."	2	K.4
193	"	PA-V-2-1 PA-V-2-2	Permit Attach-ment V-2	Waste Explosive Ordnance Operations And Safety At The White Sands Test Facility, Definitions: **WSTF Ordnance Officer**: delete "by the NASA Manager". **Assistant Ordnance Officer**: delete "Certification of the Assistant Ordnance Officer will be by the NASA Manager." **explosives**: change "detonation" to "shock". **nonel**: delete definition of. **safety fuse**: delete definition of. **fuse cap (fuse detonator)**: delete "firing device".	1	A.1
194	"	PA-V-2-2	"	Waste Explosive Ordnance Operations And Safety At The White Sands Test Facility, General Safety: Change "All operations will require 2 ordnance personnel, the ordnance officer and an assistant ordnance officer." to "All operations will require 2 ordnance personnel, the ordnance officer or an assistant ordnance officer and a safety representative."	1	A.1

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
195	"	PA-V-2-2	"	Waste Explosive Ordnance Operations And Safety At The White Sands Test Facility, General Safety: Change "When practical and applicable, the US Army Manual, AMCR 385-100 will be used as a standard for explosive operations at the OD Unit." to "When practical and applicable, the NASA Explosive Safety Standard will be used as a standard for explosive operations at the OD Unit.".	2	K.4
196	**Module V**	PA-V-2-2	Permit Attach-ment V-2	Waste Explosive Ordnance Operations And Safety At The White Sands Test Facility, General Safety: Change "Defence" to "Defense".	1	A.2
197	"	PA-V-2-5	"	Waste Explosive Ordnance Operations And Safety At The White Sands Test Facility, Specific Electric Procedures: ¶4 add "The ordnance personnel will".	1	A.1
198	"	PA-V-4-1 PA-V-4-2 PA-V-4-3	Permit Attach-ment V-4	Recommendations For Developing A Sampling And Analysis Plan For Soil At The Open Detonation Unit: Delete this permit attachment.	2	K.13

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
199	"	PA-V-4-1	Permit Attach-ment V-4	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Introduction: ¶1 change "This Plan establishes the sampling and analysis procedures that will be conducted as a requirement of the WSTF RCRA Part B Hazardous Waste Operating Permit." to "This Plan establishes the soil sampling and analysis procedures that will be conducted for the OD Unit." ¶2 change "Soil samples will be obtained from nearby soils to provide background data. These data will be used to determine the amount of contamination, if any, present in the Unit due to treatment operations." to "Soil samples have been obtained from nearby soils to provide historical background data."	2	K.13
"	"	PA-V-4-1	"	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Background Data: Delete this section.	"	"
199 (con-tin-ued)	**Module V**	PA-V-4-2	Permit Attach-ment V-4	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Sampling Methodology: ¶1 change "Surface and subsurface soil samples will be obtained semiannually (if OD operations are performed between sampling events) for the first 2 postpermit years. The monitoring will be extended if inadequate data are obtained due to long periods of inactivity:" to "Surface and subsurface soil samples will be collected annually (if OD operations are performed between sampling events) until closure of the OD Unit. To ensure that adequate data are obtained during periods of inactivity, sampling will be performed at least every two years until closure of the OD Unit."	2	K.13

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
"	"	PA-V-4-2 PA-V-4-3 PA-V-4-4	"	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Sample Analyses **Total Metals**: Delete ¶2; add ¶3, 4, 5 and 6; add Table 4-1, Limit Values.	"	"
"	"	PA-V-4-4	"	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Sample Analyses **Explosive Residues (EPA Method 8330)**: Add ¶2.	"	"
"	"	"	"	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Sampling Frequency: Delete this section.	"	"
"	"	PA-V-4-5	"	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Recordkeeping: Change "4. Statistical analysis which will compare the analytical results over time by applying the Cochran's Approximation to the Behren's Fisher Student's T test (40 CFR 264 Appendix IV)." to "Statistical evaluations of the analytical results will be performed."	"	"
199 (continued)	**Module V**	PA-V-4-5	Permit Attachment V-4	Sampling And Analysis Plan For Soil At The Open Detonation Unit, Reporting: Change "If explosive residues are detected by EPA Method 8330 or if statistical calculations determine that a significant increase in metal concentrations, per EPA Method 6010 and 7740, have occurred above background levels,..." to "If explosive residues are detected by EPA Method 8330 or if statistical calculations determine that five percent or more of a metal's measurements are expected to exceed the limits presented in Table 4-1,...". Change "within 15 days" to "within 15 working days".	2	K.13

NO.	ATTACHMENT	PAGE	SECTION	SUMMARY	MOD CLASS	CLASS CITATION
200	**Module VI**	M-VI-3	VI.E.2.	Change "Permit Attachment II-5" to "Permit Attachment VI-1".	1	A.1
201	"	"	VI.F.2.	¶2 change "that@" to "that".	1	A.2
202	"	M-VI-4	VI.G.1.	Change "Permit Attachment II-1" to "Permit Attachment VI-3".	1	A.1