CHECKLIST
FOR
TECHNICAL REVIEW
OF
RCRA PART B PERMIT APPLICATIONS
FOR
SUBPART X UNITS

January 1992

TABLE OF CONTENTS

TABLE OF CONTENTS, continued

TABLE OF CONTENTS, continued

TABLE OF CONTENTS, continued

TABLE OF CONTENTS, continued

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

I. PART A GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
SECTION I						
A. PART A GENERAL INFORMATION						
Description of activities conducted which require facility to obtain a permit under RCRA and brief description of nature of the business	40CFR270.13(a) and (m)					
Name, mailing address, and location of facility for which the application is submitted including a topographic map	40CFR270.13(b) and (l)					
Up to four Standard Industrial Classification (SIC) Codes which best reflect the products or services provided by the facility	40CFR270.13(c)					
Operator/owner's name, address, telephone number, and ownership status	40CFR270.13(d) and (e)	Ownership status must include status as federal, state, private, public, or other entity.				
Facility is new, existing, or located on Indian lands	40CFR270.13(f) and (g)	Also, description must include information on whether this is a first or revised application with date of last signed permit.				
Description of processes to be used for treating, storing, and disposing of hazardous waste	40CFR270.13(i)	Description must include the design capacity for these items.				
Specification of the hazardous wastes listed or designated under 40CFR261	40CFR270.13(j)	Specifications must include an estimate on the quantity of wastes to be treated, stored, or disposed.				
Listing of all permits or construction approvals received or applied for	40CFR270.13(k)	Permits include the following programs: Hazardous Waste Management under RCRA; UIC under Solid Waste Disposal Act (SWDA); Prevention of Significant Deterioration (PSD), Nonattainment Program, and National Emissions Standards for Hazardous Pollutants (NESHAPS) under the Clean Air Act (CAA); ocean dumping permits under the Marine Protection Research and Sanctuaries Act; dredge and fill permits under Section 404 of the Clean Water Act (CWA); or other relevant environmental permits including state permits.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
SECTION II						
A. FACILITY DESCRIPTION						
A1. General Description	40CFR270.14(b)(1)					
Applicability of Part B to this facility	40CFR264.1					
Manages waste generated on-site and off-site						
Location						
Owner or operator's name						
Types of waste management activities conducted						
Type of treatment unit						
Engineering drawings						
Specification of all wastes that have been managed at the treatment unit						
Wind rose		The frequency of occurrence of various wind directions should be compared to sensitive (local and regional) receptor points downwind.				
General dimensions and structural description						
A2. Topographic Map	40CFR270.14(b)(19)	A distance of 1,000 feet around the unit at a scale of 1 inch to not more than 200 feet (multiple maps may be submitted at this scale) should be shown and should be similar to Part A topographic map.				
Scale and date		Other scales may be used if justified.				
The 100-year flood plain area						
Surface waters						
Surrounding land use						
Map orientation						
Legal boundaries						
Access control						

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Injection and withdrawal wells (on-site and off-site)						
Buildings and other structures		See 40CFR270.14(b)(19)(x) for an example list.				
Drainage and flood control barriers						
Location of the treatment unit(s) and decontamination areas						
• Distance to property boundaries						
• Distance to buildings on- and off-site						
• Distance to public roadways						
• Distance to passenger railroads						
• Distance to closest receptor	40CFR270.23(e)	Receptors include human and environmental receptors within the facility boundary.				
Additional information on the topographic map	40CFR270.14(c)(3)					
• Uppermost aquifer and hydraulically connected aquifers beneath facility property	40CFR270.14(c)(2)					
• Ground water flow direction	40CFR270.14(c)(2)					
• Waste management areas	40CFR270.14(c)(3)					
• Property boundaries	40CFR270.14(c)(3)					
• Point of compliance location	40CFR270.14(c)(3)	Point of compliance is defined in 40CFR264.95; however, for open burning/open detonation (OB/OD) units, this will be determined on a case-by-case basis and may be at the unit boundary.				
• Location of ground water monitoring wells	40CFR270.14(c)(3)					
• Extent of any ground water contaminant plume	40CFR270.14(c)(4)(i)					
• Location of unsaturated zone monitoring	40CFR270.23(e)	If unit incorporates the soil as part of the zone of engineering control, the monitoring of this zone should be shown.				
A3. Description of Treatment Unit(s)	40CFR270.23(a)(2)	Includes detailed plans and engineering reports.				
• Location						

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Design						
• Operation						
• Maintenance						
• Monitoring						
• Inspection						
• Closure						
A4. Facility Location Information	40CFR270.14(b)(11) and 264.18					
A4a. Seismic Requirements	40CFR270.14(b)(11)(i), (ii) and 264.18(a)	Seismic requirements applicable only to new facilities.				
Political jurisdiction in which facility is proposed to be located	40CFR270.14(b)(11)(i)					
Indication of whether facility is listed in Appendix VI of 40CFR264 (new facilities)	40CFR270.14(b)(11)(i)					
New facility must be located at least 200 feet from a fault which has had displacement in Holocene time.	40CFR264.18(a) and 270.14(b)(11)(ii)	If facility location is listed in Appendix VI of 40CFR264, this information is required.				
A4b. Flood Plain Requirements	40CFR270.14(b)(11) (iii), (iv) and 264.18(b)					
Copy of Federal Insurance Association (FIA) or other flood map	40CFR270.14(b)(11) (iii)	The source to determine whether the facility is located in a 100-year flood plain should be indicated.				
Engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result from the 100-year flood plain	40CFR270.14(b)(11)(iv) and 264.18(b)	Flood plain requirements applicable if facility is located in a 100-year flood plain.				
Demonstration that facility is designed, constructed, operated, and maintained to prevent washout, or detailed description of procedures to be followed to remove hazardous waste to safety before facility is flooded		Flood plain requirements applicable if facility is located in a 100-year flood plain.				
Demonstration that no adverse effects will result from failure to remove waste by providing:		Flood plain requirements applicable if facility is located in a 100-year flood plain.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Volume and physical and chemical characteristics of the waste in the facility		Flood plain requirements applicable if facility is located in a 100-year flood plain.				
• Concentration of hazardous constituents that would potentially affect surface waters as a result of washout		Flood plain requirements applicable if facility is located in a 100-year flood plain.				
• Impact of such concentration on current or potential uses of, and water quality standards established for, the affected surface waters		Flood plain requirements applicable if facility is located in a 100-year flood plain.				
• Impact of hazardous constituents on the sediments of affected surface waters, or the soils of the 100-year flood plain, that could result from washout		Flood plain requirements applicable if facility is located in a 100-year flood plain.				
Plans and schedule for future compliance	40CFR270.14(b)(11)(v)	Flood plain requirements applicable if facility is located in a 100-year flood plain and not in compliance with 40CFR264.18(b)				
A5. Traffic Patterns	40CFR270.14(b)(10)					
Estimate of number and types of vehicles around the facility						
Information about waste transfer or pick-up stations						
Quantity of waste moved per movement per vehicle						
Traffic control signs and persons						
Road surface composition and load-bearing capacity						
B. WASTE CHARACTERISTICS						
B1. Physical and Chemical Characteristics of Wastes and Residues	40CFR270.14(b)(2) and 264.13(a)	Data generated by testing the waste, published data on the hazardous waste, or data gathered from similar processes may be used.				
Volume and composition of wastes	40CFR270.14(b)(2) and 264.13(a)					
Wastes in containers	40CFR270.15					
Wastes in tanks	40CFR270.16					
Wastes in surface impoundments	40CFR270.17					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Wastes in waste piles	40CFR270.18					
Wastes in incinerators	40CFR270.19					
Wastes in land treatment facilities	40CFR270.20					
Wastes in landfills	40CFR270.21					
Wastes in miscellaneous units	40CFR270.23					
Wastes at facilities with process vents	40CFR270.24					
B2. Copy of the Waste Analysis Plan	40CFR270.14(b)(3) and 264.13(b) and (c)					
Parameters for which each hazardous waste will be analyzed	40CFR264.13(b)(1)					
Rationale for parameters	40CFR264.13(b)(1)	The plan must discuss how analysis for these parameters will provide physical and chemical characteristics representative of the waste.				
Methods used to test the parameters	40CFR264.13(b)(2)					
Methods used to obtain representative samples of the waste being analyzed	40CFR264.13(b)(3) and 261 Appendix I	If a sampling method described in 40CFR261 Appendix I is not used, the facility must provide a detailed description of the proposed method and demonstrate its equivalency.				
Frequency of revisions or repetition of analysis	40CFR264.13(b)(4)					
Facilities managing wastes generated off-site	40CFR264.13(c)					
• Copy of the waste analyses supplied by the waste generators	40CFR264.13(b)(5)					
• Procedures used to inspect and analyze (if necessary) each shipment						
• Procedures used to inspect each movement of hazardous waste received at the facility						
• Methods of obtaining samples of the waste		If a sampling method described in 40CFR261 Appendix 1 is not used, the facility must provide a detailed description of the proposed method and demonstrate its equivalency.				
• For highly unstable wastes, a certification that the waste can be safely treated		Applicant must provide supporting data which demonstrate waste has potential to detonate or is bulk propellant.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Additional waste analysis for demonstrating compliance with requirement of ignitable, reactive, or incompatible waste management (safe handling) methods	40CFR264.13(b)(6) and 264.17					
C. PROCEDURES TO PREVENT HAZARDS						
C1. Security Procedures and Equipment	40CFR270.14(b)(4) and 264.14					
Demonstration that unknown or unauthorized contact with waste is not harmful	40CFR264.14(a)(1)	This item required if requesting a waiver to the security procedures.				
Demonstration that disturbance of waste or equipment will not cause violation of 40CFR264	40CFR264.14(a)(2)	This item required if requesting a waiver to the security procedures.				
Description of a 24-hour surveillance system	40CFR264.14(b)(1)	Monitor/camera, guards, or personnel must continuously monitor or control access to active portions of the facility.				
Description of the artificial or natural barrier	40CFR264.14(b)(2)(i)	This item required if 24-hour surveillance system is not feasible.				
Method to control entry and number of personnel in the treatment area	40CFR264.14(b)(2)(ii)	This item required if 24-hour surveillance system is not feasible.				
Sign posted at each entrance with legend "Danger - Unauthorized Personnel Keep Out"	40CFR264.14(c)					
C2. Inspection Schedule						
Copy of inspection schedule	40CFR270.14(b)(5) and 264.15	Inspection is required for monitoring equipment, safety emergency equipment, communication and alarm systems, decontamination equipment, security devices, and operating and structural equipment.				
Types of problems to be checked	40CFR264.15(b)(3)	Must provide checklist for each type of problem.				
Frequency of inspections of equipment and process	40CFR264.15(b)(4)					
Inspection record keeping	40CFR264.15(d)	An example log or summary must be provided.				
Schedule of remedial action	40CFR264.15(c)					
Daily inspection for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms	40CFR265.377(a)(3)	This must be provided as applicable for miscellaneous units (Subpart X units), thermal treatment units, and associated equipment.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
C3. Preparedness and Prevention	40CFR270.14(b)(6) and 264 (Subpart C)	The facility must submit justification of any waiver to the requirements of this section.				
Description and location of internal communications and alarm system to instruct facility personnel	40CFR264.32(a)					
Device (telephone, radio) to summon emergency assistance from outside the facility	40CFR264.32(b)					
Access to communication or alarm control	40CFR264.34					
Description of fire control, spill, and decontamination equipment	40CFR264.32(c)					
Documentation of water volume and pressure required to operate equipment listed above	40CFR264.32(d)					
Testing and maintenance schedule and procedures for the above mentioned equipment	40CFR264.33					
Documentation of adequate aisle space	40CFR264.35	Aisle space is required for unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment in case of emergency.				
Documentation of arrangements with:	40CFR264.37					
• Police						
• Fire Department						
• Emergency Response Teams						
• Local Hospitals						
C4. General Hazard Prevention	40CFR270.14(b)(8)					
Identification of possible loading and unloading hazards and documentation of steps taken to minimize or eliminate the possibility of these hazards	40CFR270.149(b)(8)(i)					
Description of mechanisms to prevent runoff and flooding	40CFR270.14(b)(8)(ii)					
Description of mechanisms to prevent contamination of water supplies	40CFR270.14(b)(8)(iii)					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Identification of equipment failure and power outage hazards and description of procedures to mitigate effects of equipment failure and power outages	40CFR270.14(b)(8)(iv)					
Personnel protection procedures	40CFR270.14(b)(8)(v)					
Procedures to minimize releases to the atmosphere	40CFR270.14(b)(8)(vi)					
C5. Prevention of Accidental Ignition or Reaction of Wastes	40CFR264.7(a) and 270.14(b)(9)					
Description of procedures to prevent accidental ignition or reaction of wastes	40CFR264.17(a) and (b)	Waste must be protected from sources of ignition or reaction. Precautions must be taken to prevent reactions which generate toxic emissions, heat, or pressure, and cause explosions.				
Documentation of adequacy of procedures	40CFR264.17(c)	Published literature, a trial test, waste analyses, or similar processes may be used.				
D. CONTINGENCY PLAN						
D1. Copy of Contingency Plan	40CFR270.14(b)(7)					
Actions to take in case of emergency	40CFR264.52(a) and 264.56	The actions to be taken in response to any unplanned release of hazardous waste to air, soil, or surface water must be described.				
Arrangements with local authorities	40CFR264.52(c)	Police and fire departments, hospitals, and emergency response teams must be notified.				
Names, addresses, and phone numbers of emergency coordinators	40CFR264.52(d) and 264.55	There must at least be one primary emergency coordinator available at all times.				
Location and description of emergency equipment at the facility	40CFR264.52(e)	It should include decontamination equipment and the capabilities of each item.				
Evacuation plan for facility personnel	40CFR264.52(f)	Evacuation plans must include evacuation signals and primary and alternate evacuation routes.				
Location and distribution of contingency plan	40CFR270.14(b)(7) and 264.53	A copy of the contingency plan must be maintained at the facility and submitted to local authorities.				
D2. Emergency Procedures	40CFR264.56(a)					
Immediate procedures for emergency coordinator to alert all facility personnel in case of emergency and notify state and local agencies if help is needed	40CFR264.56(a)					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Plans for the emergency coordinator to identify the character, source, amount, and areal extent of any explosion, fire, or release	40CFR264.56(b)	Observation, records or manifest, or chemical analysis may be used by emergency coordinator.				
Means for assessment of possible hazards to human health or the environment from an explosion, fire, or release	40CFR264.56(c)	Direct and indirect effects must be considered.				
Procedures to be followed by emergency coordinator in case of a threat to human health or the environment outside the facility	40CFR264.56(d)	Local authorities and either EPA's on-scene coordinator or the National Response Center must be notified.				
Procedures to be followed by emergency coordinator to prevent fires, explosion or release from occurring, recurring, or spreading to other hazardous wastes at the facility	40CFR264.56(e)					
Storage, treatment, and disposal of released material	40CFR264.56(g)					
Monitor for leaks, pressure buildup, gas generation or ruptures of released material	40CFR264.56(f)	This item applies if facility stops operations.				
Procedures for preventing handling of incompatible wastes until cleanup is complete	40CFR264.56(h)(1)					
Decontamination procedures	40CFR264.56(h)(2)	Decontamination is required for emergency equipment.				
Notification of EPA and state and local authorities before resuming operations	40CFR264.56(i)	EPA (or state) must be notified within 15 days of occurrence.				
Procedures for record keeping and reporting to EPA	40CFR264.56(j)					
E. PERSONNEL TRAINING						
Outline of both the introductory and continuing training programs	40CFR270.14(b)(12)	All facility personnel must be trained to perform their duties safely.				
A description of how training will be designed to meet actual job tasks	40CFR270.16(a),(b), and (c)	The training must be conducted by a qualified person; there must also be an annual review of the training.				
Training for emergency response	40CFR264.16(a)(3)	Personnel must be made familiar with emergency procedures, emergency equipment, and emergency systems.				
Maintenance of training records/copy of personnel training documents	40CFR264.16(d)(e) and 270.14(b)(12)	The owner or operator must maintain records of job titles, names of employees, job descriptions, and the types and amount of training given to each employee.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Training content, frequency, and techniques		Training must also be applicable to site conditions.				
• Training director is properly trained						
F. CLOSURE AND POST-CLOSURE PLAN						
F1. Closure Plan Documentation	40CFR270.14(b)(13)					
Description of partial or final closure procedures	40CFR264.112(b)(1) and (2)	Final closure must minimize the need for further maintenance and must control post-closure release to ground water, surface water, soil, and the atmosphere.				
Description of maximum unclosed portion during the active life of the facility	40CFR264.112(b)(2)					
Estimate of maximum waste inventory in storage and treatment during facility life	40CFR264.112(b)(3)					
Description of procedures for removal or decontamination of hazardous waste residues, equipment, structures, and soils	40CFR264.112(b)(4) and 264.114					
• Location of disposal facility (equipment, structures, and soils when removed)						
• Methods for sampling and testing surrounding soils						
• Criteria for determining decontamination levels						
Description of additional activities performed during closure:	40CFR264.112(b)(5)					
• Ground water monitoring						
• Leachate collection						
• Run-on and run-off control						
Description of closure schedule including:	40CFR264.112(b)(6) and 264.113					
• Total time to close each unit		The hazardous waste must be treated, removed, or disposed of within 90 days after receiving the final volume of waste; all closure activities must be completed within 180 days after receiving the final volume of waste.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Timetable of closure activities						
Estimate of year of closure	40CFR264.112(b)(7)	Estimate of year of closure is required for those facilities that use trust funds to establish financial assurance and are expected to close before expiration of the permit.				
Extension of closure time	40CFR264.113(a) and (b)	Justification is required if extension is expected to exceed 90 days for treatment, removal, and disposal of wastes and 180 days for completion of closure activities.				
F2. Copy of Post-Closure Plan	40CFR264.117, 264.118, and 264.603	Post-closure plan is expected when the OB/OD unit incorporates the soil as part of the zone of engineering control, unless clean closure is to be attained.				
Post-closure care mechanisms	40CFR264.603	This includes procedures to prevent any releases that have adversely affected human health or the environment due to migration of wastes in the ground water, surface water, wetlands, soils or air.				
Description of maintenance, monitoring, inspection, and frequencies for:	40CFR264.118(b)(1) and (2)					
• Waste-fabricated structures						
• Facility monitoring equipment						
Identification and location of person responsible for storage and for updating facility copy of post-closure plan during post-closure period	40CFR264.118(b)(3)					
Procedure for updating all other copies of post-closure plan	40CFR264.118(b)(2)	A procedure is required to cover changes in operating plans, facility design, expected years to closure, or other events.				
F3. Copy of Most Recent Closure and Post-Closure (if applicable) Cost Estimates	40CFR264.142, 264.144, and 270.14(b) (15) and (16)	Cost estimates must be detailed and assume the hiring of a third party to conduct closure and post-closure care.				
F4. Copy of Documents Used as Financial Assurance Mechanisms	40CFR264.143, 264.145, and 264.146	For new facilities, the documentation may be substituted up to 60 days before initial receipt of hazardous waste.				
Financial assurance document for closure						
Adequacy of document						
Copy of document						

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
F5. Documentation of Notice of Deed	40CFR270.14(b)(14) and 264.119	This notice applies to a closed unit.				
F6. Copy of Insurance Policy	40CFR264.147					
Coverage for sudden accidental occurrences	40CFR264.147(a)	Liability coverage of $1 million per occurrence and $2 million for annual aggregate is required.				
Coverage for nonsudden accidental occurrences	40CFR264.147(b)	Liability coverage of $3 million per occurrence and $6 million for annual aggregate is required.				
G. PROTECTION OF GROUND WATER						
Unit is a regulated unit	40CFR270.14(c), 270.23(b), and 264.90(a)(2)	Protection of ground water must be addressed only for regulated units.				
Existing ground water monitoring data	40CFR270.14(c)(1) and 270.23					
Identification of upper-most aquifer and aquifers hydraulically interconnected beneath the facility property	40CFR270.14(c)(2) and 270.23					
Ground water flow, direction, rate, and source of information	40CFR270.14(c)(2) and 270.23					
Description of any plume of contamination that has entered the ground water from a regulated unit	40CFR270.14(c)(4) and 270.23					
• Indication of the extent of the plumes on the topographic map	40CFR270.14(c)(4)(i), 264.600, and 270.23					
• Concentration of pollutants in the plume	40CFR270.14(c)(4)(ii)	The description must identify constituents of 40CFR264 Appendix IX, waste open burned or detonated, and potential compounds formed in OB/OD.				
Proposed ground water monitoring program	40CFR270.14(c)(5), 264.97, 264.600, and 270.23					
• Description of well design and location	40CFR264.97, 264.600, and 270.23	The description should include discussion or inspection of well to withstand OB/OD or other activities.				
• Sample collection	40CFR264.97(d)(1), 264.600, and 270.23					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Sample preservation and shipment	40CFR264.97(d)(2), 264.600, and 270.23					
• Sampling and analysis procedures	40CFR264.97(d)(3), 264.600, and 270.23					
• Determination of the ground water surface elevation each time ground water is sampled	40CFR270.23(e)					
• Vadose zone monitoring	40CFR270.23(e) and 270.32(b)(2)					
• Field measurements	40CFR270.23(e)					
- Water level						
- pH						
• Well evacuation	40CFR270.23(e)					
• Sample preparation	40CFR270.23(e)					
• Analytical procedures	40CFR270.23(e)					
• QA/QC procedures	40CFR270.23(e)					
• Data evaluation and reporting	40CFR270.23(e)					
• Chain-of-custody control	40CFR264.97(d)(4), 264.600, and 270.23					
Detection monitoring program information:	40CFR270.14(c)(6), 264.98, 264.600, and 270.23	This applies when hazardous constituents have not been detected in the ground water at the time of permit application.				
• Indicator parameters	40CFR270.14(c)(6)(i), 264.98(a)(i), 264.600, and 270.23	This can include waste constituents.				
• Hazardous constituents	40CFR270.14(c)(6)(i), 264.600, and 270.23					
• A proposed ground water monitoring system	40CFR270.14(c)(6)(ii), 264.600, and 270.23					
• Background values for each proposed monitoring parameter or constituent	40CFR270.14(c)(6)(iii), 264.600, and 270.23					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Description of proposed sampling, analysis, and statistical comparison procedures	40CFR270.14(c)(4)(iv), 264.600, and 270.23					
Record keeping of ground water analytical data	40CFR264.98(c) and (g)					
Compliance monitoring program	40CFR270.14(c)(7) and 264.94	This applies when hazardous constituents have been detected in the ground water at the point of compliance.				
• Description of wastes previously handled at the facility	40CFR270.14(c)(7)(i)					
• Characterization of ground water	40CFR270.14(c)(7)(ii)	Any hazardous constituents should be included.				
• Use of Ground Water Information Tracking System (GRITS) or other system	40CFR270.32(b)(2) and 270.23(e)					
• List of hazardous constituents for which compliance monitoring will take place	40CFR270.14(c)(7)(iii)					
• Proposed concentration limits for each hazardous constituent	40CFR270.14(c)(7)(iv)					
• Detailed plans and an engineering report describing the proposed ground water monitoring system	40CFR270.14(c)(7)(v)					
• Description of proposed sampling, analysis, and statistical comparison procedures	40CFR270.14(c)(7)(vi)					
• Ground water flow rate and direction reported annually	40CFR264.99(e)					
• Reporting when concentration limits exceeded	40CFR264.99(h) and (i)					
Corrective action program or data showing that the existing levels are not harmful	40CFR270.14(c)(8)	When level of contaminants exceeds background level or the limits established under 40CFR264.94 Table 1, the facility may present data demonstrating that the levels are not harmful in place of a corrective action program.				
• Characterization of the contaminated ground water	40CFR270.14(c)(8)(i)					
• Concentration limit for each hazardous constituent	40CFR270.14(c)(8)(ii)					
Detailed plans and engineering report describing the corrective action to be implemented	40CFR270.14(c)(8)(iii)	A schedule for submitting this information may be presented.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

II. PART B GENERAL INFORMATION REQUIREMENTS

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Description of use of the ground water monitoring program to demonstrate the adequacy of the corrective action	40CFR270.14(c)(8)(iv), 270.14(d), and 264.101	A schedule for submitting this information may be presented.				
H. PROTECTION OF SURFACE WATER						
Prevention of migration of wastes to surface water	40CFR264.601(b)	Location of surface waters must be depicted on a topographic map.				
I. OTHER APPLICABLE REGULATIONS						
Unit is classified as a "miscellaneous unit"	40CFR264.600	To address miscellaneous units, see Section III.				
Unit is classified as a process vent	40CFR264.1030	To address process vents, see Section IV.				
Unit is subject to equipment leaks	40CFR264.1050	To address equipment leaks, see Section V.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
SECTION III						
A. PROCESS INFORMATION						
Applicability as a "miscellaneous unit"	40CFR264.600 and 270.23 56FR720002(2/21/91) and 52FR469252(12/10/87)	The Subpart X regulations cover "miscellaneous" units. Among these units are OB/OD units for propellants, explosives, and pyrotechniques (PEP), geologic repositories and thermal treatment units such as microwave destruction.				
A1. Open Burning (OB) in Containment Devices Where Unit Incorporates Soil as Part of the Unit	40CFR270.23 and 270.32					
Appropriateness of treatment methods	40CFR270.32(b)	The applicant must demonstrate that the treatment technology is protective of public health and various environmental media, in addition to being safe for the waste handler.				
Containment device description	40CFR270.23(a)	Dimensions, construction materials, and controls must be described.				
• Physical characteristics, construction materials, and dimensions of the unit	40CFR270.23(a)(1)					
• Engineering drawings of the fabricated device	40CFR270.23(a)(2)	Drawings must be provided to determine design specifications and dimensions.				
• Lining material within device	40CFR270.23(a)(1) and (2)	Construction materials and applicable physical properties must be described.				
• Lining material below device	40CFR270.23(a)(1) and (2)	Dimensions, type of material, applicable physical properties, and depth below the fabricated device must be described.				
Leak detection provisions	40CFR270.23(a)(1) and (2)	Items and equipment used, functions, types of materials, dimensions, and physical properties must be described.				
Precipitation cover	40CFR270.23(a)(1) and (2)	For nonoperational periods, dimensions, construction materials, physical properties, and method of covering device must be described.				
Control of releases of ashes and residues during OB (integrity of containment devices)	40CFR270.23(a)(1) and (2)	Control must be by preventing releases or collecting the ashes and residues.				
Methods to control deterioration of fabricated devices	40CFR270.23(a)(1) and (2)	When organic compounds are present in the waste, the device must be located above ground with secondary containment below the device.				
Prevention of accumulation of precipitation	40CFR270.23(a)(1) and (2)	Precipitation can cause releases of ashes or waste or prevent complete thermal treatment of wastes. The type of cover must be indicated.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Handling of precipitation accumulated in fabricated devices	40CFR270.23(a)(1) and (2)	Treatment and disposal must be described.				
Controls to prevent wind dispersion of ash and other residue	40CFR270.23(a)(1) and (2)	Controls during and between burns must be described.				
Inspection, monitoring, and maintenance plan	40CFR270.23(a)(2)	A schedule should be included.				
Ash and residue management	40CFR270.23(a)(2)	Treatment and disposal must be described.				
Copy of standard operating procedures (SOPs)	40CFR270.23(a)(2)					
A2. OB on the Ground Surface Where Unit Incorporates the Soil as Part of the Unit	40CFR270.23 and 270.32	Acceptance of this method must be evaluated on case-by-case basis.				
Appropriateness of treatment technology	40CFR270.32(b)	The applicant must demonstrate that the treatment technology is protective of public health and various environmental media, in addition to being safe for the waste handler.				
Description of OB unit	40CFR270.23(a)	A brief overview must be provided.				
• Physical characteristics, construction materials, and dimensions of the unit	40CFR270.23(a)(1)					
• Engineering drawings of the OB unit	40CFR270.23(a)(2)	To determine design specifications and dimensions, the drawings must indicate how the boundaries of the OB unit are marked.				
• Pad description (if any)	40CFR270.23(a)(2)	Material, dimensions, compatibility with wastes, slope (if any), and permeability must be provided.				
• Lining material (if any)	40CFR270.23(a)(2)	The grade just below the pad should be able to withstand OB.				
Precipitation cover for nonoperational periods	40CFR270.23(a)(2)	Dimensions, construction materials, applicable physical properties, and method of covering the device must be described.				
Measures to minimize subsurface contamination	40CFR270.23(a)(2)	Use of underground liner may be limited because accidental detonations may damage the liner.				
Prevention of accumulation of precipitation	40CFR270.23(a)(2)	Precipitation can cause releases of ashes or waste or prevent complete thermal treatment of the wastes. The type of cover must be indicated.				
Inspection, monitoring, and maintenance plan	40CFR270.23(a)(2)	A schedule should be included.				
Copy of SOPs	40CFR270.23(a)(2)					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
A3. Open Detonation (OD)	40CFR270.23 and 270.32					
Appropriateness of treatment technology	40CFR270.32(b)	The applicant must demonstrate that the treatment technology is protective of public health and various environmental media, in addition to being safe for the waste handler.				
Description of OD Unit	40CFR270.23(a)					
• Physical characteristics, materials of construction, and dimensions of the unit	40CFR270.23(a)(1)					
• Engineering plan and drawings of the OD unit	40CFR270.23(a)(2)	To determine design specifications and dimensions, the drawings must indicate how the edges of the OD unit are marked.				
Inspection, monitoring, and maintenance plan	40CFR270.23(a)(2)	The schedule should be included.				
Ash and residue management	40CFR270.23(a)(2)	Although little or no ash is generated in OD units, provisions should be made to demonstrate that soils and surface water have not been contaminated (such as soil and surface water sampling from designated areas and depths at required frequencies).				
Run-on and run-off management	40CFR270.23(a)(2)	Devices and equipment (berms, ditches, collection systems), dimensions, and other applicable physical properties are not of major concern for OD units because little or no ash is generated.				
Copy of SOP	40CFR270.23(a)(2)					
A4. Geologic Repositories - placement of containerized hazardous waste or bulk nonliquid hazardous waste in geologic repositories such as underground salt formations, mines, or caves	52FR46952(12/10/87)	Description of unit must be included.				
A5. Deactivated Missile Silos	52FR46952(12/10/87)	This does not include underground injection wells or other units currently covered in 40CFR264.				
A6. Certain Thermal Treatment Units other than incinerators such as:	56FR720002(2/21/91) and 57FR546952(12/10/87)					
• Molten salt pyrolysis	52FR46952(12/10/87)	Description of unit must be included.				
• Calcination	52FR46952(12/10/87)	Description of unit must be included.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Wet-air oxidation	52FR46952(12/10/87)	Description of unit must be included.				
• Microwave destruction	52FR46952(12/10/87)	Description of unit must be included.				
• Carbon regeneration	56FR720001(2/21/91)	Description of unit must be included.				
• Sludge dryers	56FR720102(2/21/91)	Sludge dryer refers to any enclosed thermal treatment device used to dehydrate sludge and that has a maximum thermal input of 1,500 British Thermal Units per pound (Btu/lb) sludge treated on a wet-weight basis. A description of unit should be included.				
Future additions as needed.						
A7. Certain Chemical, Physical, and Biological Treatment Units.	52FR46952(12/10/87)	This does not cover treatment in tanks, surface impoundments, and land treatment units. Description of unit should be included.				
B. ENVIRONMENTAL PERFORMANCE STANDARDS						
B1. Quantity and Physical and Chemical Characteristics of the Waste and Products of Combustion.	40CFR264.601(a)(1), (b)(1), and 270.23	Provide chemical properties pertinent to the compounds in wastes and potential compounds formed during OB/OD and their behavior in soil, ground water, or surface water.				
EPA waste code	40CFR270.23(e)					
Amount burned at the unit	40CFR264.601(a)(1) and 270.23	This amount indicates the maximum amount of wastes that could migrate to the ground water.				
Waste composition data	40CFR264.601(a)(1) and 270.23	These data should be briefly presented in this section again.				
Solubility in water	40CFR264.601(a)(1) and 270.23	Solubility should be provided for each compound.				
Mobility in soil	40CFR264.601(a)(1) and 270.23	Mobility in soil should be provided for each compound.				
Physical state and molecular properties	40CFR264.601(a)(1) and 270.23	Physical state and molecular properties should be provided for each compound.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Mobility in ground water	40CFR264.601(a)(1) and 270.23	Mobility in ground water should be provided for each compound.				
Sorption properties of waste material relative to environmental media	40CFR264.601(a)(1) and 270.23					
Biodegradability, bioconcentration, and biotransformation relative to environmental media	40CFR264.601(a)(1) and 270.23					
Photodegradation rates of waste	40CFR264.601(a)(1) and 270.23					
B2. Hydrogeological Characteristics of the Site	40CFR270.23(b), 264.601(a)(2), and (b)(3)					
Depth to water beneath the unit	40CFR264.601(a)(2) and 270.23(b)	This information should be obtained from boring logs associated with the process of identifying the uppermost aquifer. The source of this information should be referenced.				
Estimate of net recharge rate	40CFR264.601(a)(2) and 270.23(b)	Net recharge = (precipitation + runon) - (evapotranspiration + runoff)				
Description of uppermost aquifer	40CFR264.601(a)(2) and 270.23(b)					
Description of soil types and depth range of each soil	40CFR264.601(a)(2) and 270.23(b)	Between the ground surface and the water table.				
Topography of the unit area	40CFR264.601(a)(2) and 270.23(b)	A brief description and maps showing natural surface drainage basins and storm water collection systems for the area affected by the operation should be provided.				
B3. Protection of Ground Water and Subsurface Environment	40CFR264.601(a) and 270.23(b)(c)	Applicant must conduct an assessment of the potential for a release to ground water or subsurface environment.				
Potential for migration through soil, liners, and containing structures	40CFR264.601(a)(1)					
Ground water quality and all possible sources of contamination	40CFR264.601(a)(3)	To determine whether a particular contaminant is introduced by the OB/OD unit and evaluate the cumulative effect on ground water				
Ground water flow and rate	40CFR264.601(a)(4) and (b)(5)	To determine direction and rate of plume migration in case of ground water contamination				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Proximity to and withdrawal rates of current and potential ground water users	40CFR264.601(a)(5)	The 1,000-foot radius of the unit is useful in determining need for and level of cleanup in case of ground water contamination.				
Potential for damaging unsaturated zone	40CFR264.601(b)(8)					
Land use patterns in the area	40CFR264.601(a)(6) and (b)(9)					
Potential for deposition or migration of waste constituents into subsurface physical structures, and into root zone of food chain crops and other vegetation	40CFR264.601(a)(7)					
Effects of explosion on geologic units and ground water flow under the unit	40CFR270.23(e), 264.601(a)(1), and (b)(2)					
Potential impacts on human health	40CFR264.601(a)(8) and (b)(10)	When the uppermost aquifer is used as a drinking water supply, a risk evaluation should be developed. Potency factors by hazardous constituent should be used to determine risks.				
Potential for damage to flora, fauna, and physical structures due to exposure	40CFR264.601(a)(9) and (b)(11)					
B4. Protection of Surface Water, Wetlands, and Soil Surface	40CFR264.601(b), 270.23 (b), and (c)					
Effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration	40CFR264.601(b)(2)					
Precipitation patterns in the area	40CFR264.601(b)(4)					
Proximity of the units to surface waters	40CFR264.601(b)(6)					
Water and surface soil quality standards, quality data, and uses	40CFR264.601(b)(7)(8)	If operation does not affect surface waters, this item does not apply. Otherwise, actual uses of surface waters (including seasonal uses) should be discussed.				
C. AIR QUALITY ASSESSMENTS						
C1. Volume and Physical and Chemical Characteristics of the Waste in the Unit	40CFR270.23(b) and 264.601(c)(1)	Emissions from evaporation or reaction processes should be evaluated for potential dispersal of gases, aerosols, and particulates. The emissions may be determined by direct measurement or by using emission factors. Emission factors for all suspected hazardous air pollutants and compounds formed in OB/OD should be determined.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
C2. Effectiveness and Reliability of Systems and Structures to Reduce or Prevent Emissions	40CFR264.601(c)(2) and 270.23(d)	Emissions during preburn phase should be zero.				
C3. Operating Conditions of the Unit (Case by Case)	40CFR264.601(c)(3)	The following operating conditions should be addressed: allowable quantities of waste per unit, operating time frames, ambient air monitoring requirements, acceptable meteorological conditions, meteorological requirements, and meteorological monitoring.				
C4. Atmospheric, Meteorological, and Topographic Characteristics of the Unit and Surrounding Areas	40CFR264.601(c)(4)	The mechanisms for using meteorological data to understand and manage air emissions should be specified.				
Frequency of inversions	40CFR264.601(c)(4)					
Lake and pond evaporation	40CFR264.601(c)(4)					
Annual and 24-hour rainfall data	40CFR264.601(c)(4)					
Seasonal temperatures	40CFR264.601(c)(4)					
Relative humidity	40CFR264.601(c)(4)	Relative humidity should be considered in terms of possible formation of harmful chemicals from the combustion products.				
Wind rose	40CFR264.601(c)(4)	Restriction should be applied when the direction is not appropriate for release emissions.				
C5. Existing Air Quality (Toxic Pollutants) and Other Sources of Contamination	40CFR264.601(c)(5)	Applicant must determine general ambient air quality conditions prior to releases. If not available, such data should be generated. Applicant must use EPA-approved air monitoring methods to provide data.				
C6. Potential Impacts to Human Health and the Environment	40CFR264.601(c)(6)	These impacts should be evaluated for the entire treatment process through modeling or emissions monitoring of hazardous constituents.				
C6a. Screening Assessment	40CFR264.601(c) and 264.602					
Types and quantities of wastes	40CFR264.601(c)(1)					
Number of fabricated devices, burn areas, or detonation pits involved in a burn or detonation event and the number of events per day	40CFR264.601(c)(3)					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Total amounts of each pollutant emitted per event and the total combined amounts of pollutants emitted per year	40CFR264.601(c)(1)	The models and calculations used to determine the emission factors should be clearly identified. Emission factors for all suspected hazardous air pollutants should be determined. Units of measure should be presented in mass of pollutant emitted per mass of material burned.				
Duration of release (from a few seconds to a few hours)	40CFR264.601(c)(3)					
Description of emissions (plume) to the atmosphere	40CFR264.601(c)(1)					
• Release height	40CFR264.601(c)(1)	For burns and detonations conducted on the ground surface, the release height will be 0 meters.				
• Temperature	40CFR264.601(c)(1)	Typical values are around 6,700 degrees Fahrenheit (°F) for open burning. No detonation temperatures are given.				
Downwind concentrations of each known or suspected hazardous waste constituent emitted, including carcinogenic compounds	40CFR264.601(c)(1)	Air monitoring or an EPA-approved dispersion model can be used. The selection of the model will be a function of the geometry of the treatment unit, duration of the release, and local topography. Specific models used by the applicant must be evaluated and approved by EPA.				
Compare concentrations with existing toxic air pollution standards	40CFR264.601(c)(1)	EPA Superfund guidance should be used for assessing the air pathway utilizing IRIS data.				
Risk analysis	40CFR264.601(c)(6)	EPA's Risk Assessment Guidance should be used for Superfund and RCRA Facility Investigation (RFI) documents.				
• Urban or rural area	40CFR264.601(c)(6)					
• Population density	40CFR264.601(c)(6)	The location of the facility in a densely or sparsely populated area should be described.				
• Land use in nearby areas	40CFR264.601(c)(6)	Land use should be identified as residential, industrial, agricultural, or others.				
• Sensitive receptors within a 69-kilometer (km) radius	40CFR264.601(c)(6)	This includes schools or hospitals.				
• Estimate of number of exposed individuals	40CFR264.601(c)(6)	Estimate should include individuals living and working on the premises.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
• Calculation of lifetime cancer risk	40CFR264.601(c)(6)	This is a function of downwind concentrations, unit risk value, and exposure duration. EPA's guidance documents (Superfund and RFI) should be used for the risk assessment. This result will determine whether a more detailed risk assessment is required.				
C6b. Detailed Assessment	40CFR264.601(c)(6)					
The following general parameters should be considered:	40CFR264.601(c)(6)					
• EPA approved dispersion model should be used	40CFR264.601(c)(6)	Sufficient meteorological data (3 to 5 years) should be used to verify that worst-case meteorological conditions are addressed.				
• Detailed network of receptor points	40CFR264.601(c)(6)	This is necessary to permit the estimation and identification of receptor points that are exposed to maximum concentrations.				
• Detailed estimate of exposed population	40CFR264.601(c)(6)	Permit writers must consult with the regional EPA toxicologist for risk assessment issues.				
• Noninhalation pathways (ingestion and dermal contact) must be addressed	40CFR264.601(c)(6)	Appropriate pathway exposure models for direct and indirect exposure should be used. The regional EPA toxicologist should be consulted.				
• Estimate of individual excess lifetime cancer risk	40CFR264.601(c)(6)	This value is the sum of the excess cancer risk due to the inhalation of airborne carcinogens and the excess risk due to exposure from other paths (ingestion and dermal absorption).				
C7. Potential Damage to Domestic Animals, Wildlife, Crops, Vegetation, and Physical Structures	40CFR264.601(c)(7)					
D. POTENTIAL PATHWAYS OF EXPOSURE AND POTENTIAL EXPOSURE MAGNITUDE						
Potential for the public to be exposed to hazardous wastes	40CFR270.23(c)					
Amount of time the waste will remain in the unit before it is detonated or burned	40CFR270.23(c)					
Expected time to complete burning	40CFR270.23(c)					
Protection or shelter for personnel during burning or detonation	40CFR270.23(c)	Description of personal protection equipment (PPE) should be included.				
Meteorological conditions under which burning or detonation will be permitted or restricted	40CFR270.23(c)					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Length of time after operation of the unit before reentry of personnel to the burning ground or detonation site is allowed	40CFR270.23(c)					
D1. Potential Human and Environmental Receptors	40CFR270.23(c)	Based on current and future land use, including both short-term and long-term exposure receptors, receptors of indirect exposure, such as consumers of fish and agricultural products from the site area, must be considered.				
Locations of receptors relative to the site	40CFR270.23(c)					
Sensitive populations	40CFR270.23(c)	Include subpopulations such as children, elderly people, and endangered species, that are at increased risk.				
D2. Potential Exposure Pathways	40CFR270.23(c)	Use Risk Assessment Guidance for Superfund and RFI.				
Release sources, characteristics, quantities, and duration	40CFR270.23(c)	Releases can occur from the waste itself, from contaminated soil and water, or from the compounds formed in OB/OD.				
Release mechanisms	40CFR270.23(c)	Volatilization, fugitive dust, particulate emissions, surface runoff, leaching, and tracking are common mechanisms.				
Receiving media	40CFR270.23(c)	Media include air, surface water, ground water, soil, sediment, and biota.				
Fate and transport in receiving media	40CFR270.23(c)	Fate and transport include physical transport (convection), physical transformation (volatilization, precipitation), chemical transformation (photolysis, oxidation), biological transformation (biodegradation) and accumulation.				
Exposure points	40CFR270.23(c)	Any point, both on-site and off-site, where any of the potential human and environmental receptors can contact the receiving media is considered an exposure point.				
Probable exposure routes	40CFR270.23(c)					
Wetting of the burning area	40CFR270.23(c)	If wetting area is required by operating procedures, descriptions of methods used in process and methods to minimize release of hazardous wastes or constituents should be included.				
D3. Potential Magnitude and Nature of Exposure	40CFR270.23(c)					
Exposure concentrations	40CFR270.23(c)	Arithmetic average of concentration that is contacted over the exposure period at exposure points in air, surface water, ground water, soil, sediment, and biota is sufficient.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Total risk	40CFR264.601 and 270.23(c)					
E. EFFECTIVENESS OF THE TREATMENT						
Report demonstrating the effectiveness with supporting lab or field data	40CFR270.23(d)					
F. ADDITIONAL INFORMATION						
F1. Noise Considerations	40CFR264.601 and 270.23(e)	Protection of human health and the environment primarily related to OD units is the primary concern.				
Distance of the OB/OD unit, or area, from off-plant inhabited buildings	40CFR265.382					
Wind direction	40CFR264.601 and 270.23(e)	Noise will be carried in the direction of the wind.				
Airblast	40CFR264.601 and 270.23(e)	See 30CFR816.67(b)(69).				
• Airblast maximum levels	40CFR264.601 and 270.23(e)	The use of explosives and control of adverse effects are covered by 30CFR816.67(b)(1). It presents a table of the maximum acceptable levels of decibels (dB). Also see 30CFR816.67(b)(69).				
• Monitoring of airblast effects at several receptors	40CFR264.601 and 270.23(e)	See 30CFR816.67(b)(69).				
• Type, sensitivity, and capability of blast-monitoring equipment	40CFR264.601 and 270.23(e)					
• Procedure	40CFR264.601 and 270.23(e)					
• Map showing monitoring receptors	40CFR264.601 and 270.23(e)					
• Range of sizes of explosive charges in the monitoring data	40CFR264.601 and 270.23(e)					
• Atmospheric conditions during the monitoring	40CFR264.601 and 270.23(e)					

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

III. SPECIFIC INFORMATION REQUIREMENTS FOR MISCELLANEOUS UNITS (SUBPART X)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Ground vibration	40CFR264.601, 270.23(e), and 30CFR816.67(d)(69)	Three methods of compliance are presented in 30CFR816.67(d)(69) with maximum acceptable levels of ground vibration: (1) maximum peak-particle-velocity limits; (2) scaled-distance equation; and (3) blasting level chart.				
• Specific maximum ground vibration	40CFR264.601 and 270.23(e)					
• Method of determination of ground vibration	40CFR264.601 and 270.23(e)					
Manner of placing the waste in the unit	40CFR264.601 and 270.23(e)					
• Use of supplemental fuels, type, amount, and manner of placing them in the waste	40CFR264.601 and 270.23(e)					
Minimum protective distances	40CFR265.382 and 270.23(e)	Minimum distances to the property of others are: Quantity of Explosive — Distance 1. 0 to 100 lb - 670 ft 2. 101 to 1,000 lb - 1,250 ft 3. 1,001 to 10,000 lb - 1,730 ft 4. 10,000 to 30,000 lb - 2,260 ft or other distances as demonstrated to protect human health and the environment.				

Note: Miscellaneous general guidance documents such as: Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual - Part A, and RCRA Guidance Manual for Permitting Commercial Explosive Industry Open Burning/Open Detonator Units, 1989, may also be used for guidance purposes only.

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

IV. SPECIFIC INFORMATION REQUIREMENTS FOR PROCESS VENTS (SUBPART AA)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
SECTION IV						
A. GENERAL DEFINITION OF PROCESS VENTS						
Description of process vent	40CFR264.1030 and 264.1031	A process vent is any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank.				
B. OPERATIONS ASSOCIATED WITH PROCESS VENTS						
Applicability - operations that manage hazardous waste with organic concentrations of at least 10 parts per million by weight (ppmw)	40CFR264.1030(b) and 264.1031	Concentrations should be determined by a time-weighted average annually or when waste or process changes.				
B1. Distillation - a batch or continuous operation which separates one or more feed stream(s) into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s)	40CFR264.1030(b) and 264.1031	A description of process should be included.				
B2. Fractionation - a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages	40CFR264.1030(b) and 264.1031	A description of process should be included.				
B3. Thin-film Evaporation - a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical	40CFR264.1030(b) and 264.1031	A description of process should be included.				
B4. Solvent Extraction - an operation or method of separation in which a solid or solution contacts a liquid solvent (the two being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent	40CFR264.1030(b) and 264.1031	A description of process should be included.				
B5. Air Stripping - a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid	40CFR264.1030(b) and 264.1031	A description of process should be included.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

IV. SPECIFIC INFORMATION REQUIREMENTS FOR PROCESS VENTS (SUBPART AA)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
B6. Steam Stripping - a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of stream directly into the charge	40CFR264.1030(b) and 264.1031	A description of process should be included.				
C. METHODS FOR REDUCING EMISSIONS FROM PROCESS VENTS						
C1. Reduce Total Organic Emission Below 1.4 Kilogram Per Hour (3 pound per hour) and 2.8 Million Grams Per Year (3.1 tons per year), or	40CFR264.1032(a)(1), (c), and 270.24(b)	Engineering calculations or performance test may be used.				
C2. Reduce Total organic Emissions of 95% by Weight with the Use of a Control Device, or	40CFR264.1032(a)(2), (b), and 270.24(b)					
C3. Reduce Emissions for Various Control Devices with Closed-vent Systems Under the Following Operational Conditions:	40CFR264.1032(a) and (b), 264.1033 (b-j), and 270.24(b)	Closed-vent systems are optional devices but must comply with regulations if they are used.				
• Control device involving vapor recovery (condenser or absorber) shall recover at least 95 percent by weight of the organic vapors	264.1032(a)(1) and (b)	A less than 95 percent recovery is permissible if the control devices meet emission limits set in 40CFR264.1032(a)(1).				
• Closed combustion device (a vapor incinerator, boiler, or process heater) shall recover at least 95 percent by weight of organic emissions	40CFR264.1033(c)	The device must achieve 20 ppmw or ½ second residence time at 760 degrees Celsius (°C).				
• A flare shall operate under the following four conditions: (1) no visible emissions, (2) a flame present at all times, (3) an acceptable net heating value, and (4) appropriate exit velocity	40CFR264.1033(d)					
• Carbon adsorption system shall recover at least 95 percent by weight of the organic vapors	40CFR264.1032(a)(2), (b), and 270.24(b)					
D. MONITORING AND INSPECTION OF CONTROL DEVICES						

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

IV. SPECIFIC INFORMATION REQUIREMENTS FOR PROCESS VENTS (SUBPART AA)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Inspection readings are conducted at least daily. Vent stream flow information is provided at least hourly.	40CFR264.1033(f)(1) and (3)					
D1. Continuous Monitoring for the Following Control Devices:	40CFR264.1033(f)(2)					
• Thermal vapor incinerator (one temperature sensor)	40CFR264.1033(f)(2)(i)	Sensor must have accuracy of ± 1 percent °C or ± 0.5 °C, whichever is greater.				
• Catalytic vapor incinerator (two temperature sensors)	40CFR264.1033(f)(2)(ii)	Sensors must have accuracy of ± 1 percent °C or ± 0.5 °C, whichever is greater.				
• Flare (heat sensing device)	40CFR264.1033(f)(2)(iii)					
• Boiler or process heater with heater input capacity equal or greater than 44 megawatts (recorder which indicates good combustion practices)	40CFR264.1033(f)(2)(v)					
• Condenser (device to measure organic vapors or temperature sensor)	40CFR264.1033(f)(2)(vi)	Sensor has accuracy of ± 1 percent °C or ± 0.5 °C, whichever is greater.				
• Carbon adsorption system (device to measure organic vapors or a recorder that verifies predetermined regeneration cycle)	40CFR264.1033(f)(2)(vii)					
D2. Alternate Monitoring of Control Device	40CFR264.1033(i) and 270.23(c)	Information should be provided describing measurement of applicable monitoring parameters.				
D3. Inspection of the Following Control Devices:	40CFR264.1033(g) and (h)					
• Regenerable carbon adsorption system	40CFR264.1033(g)	Carbon replacement schedule must be acceptable.				
• Nonregenerable carbon adsorption system	40CFR264.1033(h)	Carbon must be replaced when breakthrough is observed or on an acceptable schedule.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

IV. SPECIFIC INFORMATION REQUIREMENTS FOR PROCESS VENTS (SUBPART AA)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
D4. Use of Reference Method 21 for Compliance Testing	40CFR264.60 and 1034					
E. BASIC OPERATIONAL PROPERTIES OF CLOSED-VENT SYSTEMS						
No detectable emissions	40CFR264.1033(k)(1)	Emissions must be less than 500 parts per million (ppm) above background.				
Monitoring to verify no detectable emissions	40CFR264.1033(k)(2)	The monitoring shall be done: (1) the date the system is subject to the regulation, (2) annually, and (3) other times requested by the regional administrator of the EPA.				
F. RECORD KEEPING REQUIREMENTS FOR CONTROL DEVICES AND CLOSED-VENT SYSTEMS						
Owner complies with record keeping requirements	40CFR264.1035 and 270.24(d)	Closed-vent systems are optional devices but must comply with regulations if they are used.				
Semiannual report is submitted according to subpart AA requirements	40CFR264.1036	Closed-vent systems are optional devices but must comply with regulations if they are used.				
Implementation schedule is provided	40CFR264.1033(a)(2) and 270.24(a)	A schedule must be provided when facilities cannot install a closed-vent system and control device to comply with 40CFR264 on the date the facility is subject to the requirements.				
Performance test plan is provided	40CFR264.1035(b)(3) and 270.24(c)	A performance test plan must be provided where an owner/operator applies for permission to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heather, condenser, or carbon adsorption system, and chooses to use test data to determine the organic removal efficiency achieved by the control device.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

V. SPECIFIC INFORMATION REQUIREMENTS FOR EQUIPMENT LEAKS (SUBPART BB)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
SECTION V						
A. EQUIPMENT LEAKS						
Definition of equipment leaks	40CFR264.1050	Equipment leaks are associated with operations that manage hazardous waste with organic concentrations of at least 10 ppmw. Equipment in a vacuum is excluded from Subpart BB requirements. Each piece of equipment shall be marked.				
B. STANDARDS FOR PUMPS IN LIGHT LIQUID SERVICE						
Monthly monitoring for leaks	40CFR264.1052(a)(1) and 270.25(d)					
Visual inspection for pump seal leakage on a weekly basis	40CFR264.1052(a)(2) and 270.25(d)					
Leak detection	40CFR264.1052(b), 264.1063, and 270.25(d)	Leak detected if: (1) A leak detection instrument reads 10,000 ppm or greater or (2) there are indications of liquids dripping from the pump seal.				
Leak repair as soon as practicable	40CFR264.1052(c), 1059, and 270.25(d)	Repairs are to be made within 15 calendar days after detection. Repair extensions are allowed under conditions specified in 40CFR264.1059.				
Specific exceptions to these standards	40CFR264.1052(d), (e), (f), and 270.25(d)	Exceptions to these standards are dual mechanical seal systems or no detectable emissions.				
C. STANDARDS FOR COMPRESSORS						
Barrier fluid pressure greater than the compressor stuffing box pressure	40CFR264.1053(b)(1) and 270.25(d)					
Barrier fluid system connected by a closed-vent system to a control device as described in Subpart AA	40CFR264.1053(b)(2) and 270.25(d)					
No detectable atmospheric emissions of hazardous contaminants from the barrier system	40CFR264.1053(b)(3) and 270.25(d)					
Sensors checked daily or an audible alarm checked monthly	40CFR264.1053(d),(e) and 270.25(d)					
Leak detection	40CFR264.1053(f) and 270.25(d)	A leak is detected if sensor indicates a failure of: (1) the seal system or (2) the barrier fluid system.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

V. SPECIFIC INFORMATION REQUIREMENTS FOR EQUIPMENT LEAKS (SUBPART BB)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Leak repair as soon as practicable	40CFR264.1053(g)(1), 264.1059, and 270.25(d)	Repairs are to be made within 15 calendar days after detection. Repair extensions are allowed under conditions specified in 40CFR264.1059.				
Specific exceptions to these standards	40CFR264.1053(h),(i), and 270.25(d)	Exceptions to these standards are certain closed vent systems or no detectable emissions.				
D. STANDARDS FOR PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE						
Except during pressure releases, no pressure relief device shall release detectable emissions.	40CFR264.1054(a) and 270.25(d)	Emissions shall be less than 500 ppm above background levels.				
Within 5 calendar days after a pressure release, no detectable emissions shall emanate from pressure release device.	40CFR264.1054(b) and 270.25(d)	Emissions shall be less than 500 ppm above background levels.				
Specific exceptions to these standards	40CFR264.1054(c) and 270.25(d)	Exceptions to these standards are certain closed vent systems.				
E. STANDARDS FOR SAMPLING CONNECTING SYSTEMS						
Sampling connecting system equipped with a closed-purge system or closed-vent system	40CFR264.1033, 264.1055(a),(b), 264.1060, and 270.25(d)	Each closed-purge system or closed-vent system shall either: (1) release no detectable air emissions into the hazardous waste management process line, (2) release no detectable air emissions to the recycled hazardous waste stream, or (3) meet operational conditions of control devices as found in 40CFR264.1033 and 40CFR264.1060.				
Specific exception to these standards	40CFR264.10(c) and 270.25(d)	Exceptions to these standards are in situ sampling systems.				
F. STANDARDS FOR OPEN-ENDED VALVES OR LINES						
Open-ended valve or line	40CFR264.1056(a),(c) and 270.25(d)	Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve that seals the open end at all times except during operations. A double block and bleed system will follow the same operating procedures except when operations require venting the line between block valves.				
Second valve	40CFR264.1056(b) and 270.25(d)	A second valve shall be operated such that the primary valve must be closed before the second valve is opened.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

V. SPECIFIC INFORMATION REQUIREMENTS FOR EQUIPMENT LEAKS (SUBPART BB)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
G. STANDARDS FOR VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE						
Monitoring schedule based on detection of leaks and predetermined schedule	40CFR264.1057(a-e), and 270.25(d)	A reading of 10,000 ppm denotes a detected leak.				
Specific exceptions to the monitoring schedule	40CFR264.1057(f-h), 264.1061, 264.1062, and 270.25(d)	Exceptions to the schedule include unsafe-to-monitor valves, no detectable emissions, and difficult-to-monitor valves.				
H. STANDARDS FOR PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICE IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS						
Monitoring	40CFR264.1058(a), 264.1063(b), and 270.25(d)	Monitoring is required within 5 days after a leak is found by sight, sound, smell, or other detection method.				
Leak detection	40CFR264.1058(b) and 270.25(d)	A leak is detected if a leak detection instrument reads 10,000 ppm or greater.				
Leak repair as soon as practicable	40CFR264.1058(c), 264.1059, and 270.25(d)	Repairs are to be made within 15 calendar days after detection. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. Repair extensions are allowed under conditions specified in 40CFR264.1059.				
I. TESTING						
Use of reference method 21 for compliance testing	40CFR264.60 and 264.1034					
J. RECORD KEEPING AND REPORTING REQUIREMENTS						
Owner complies with record keeping requirements	40CFR264.1064					
Semiannual report	40CFR264.1065	The semiannual report must be submitted according to requirements.				
Implementation schedule	40CFR270.25(b)	An implementation schedule must be provided if the facility cannot install a closed-vent system and control device to comply with the provisions of 40CFR264 Subpart BB on the effective date that the facility becomes subject to the provisions of 40CFR264 and 265.				

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

V. SPECIFIC INFORMATION REQUIREMENTS FOR EQUIPMENT LEAKS (SUBPART BB)

Item	Authority	Comments on Requirements	Location of Information in the Application	Addressed (Y/N)	Technically Adequate (Y/N)	See Attached Comment Number
Performance test plan	40CFR270.25(c)	A test plan must be provided if the owner/operator applies for permission to use a control device for other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system and chooses to use test data to determine the organic removal efficiency achieved by the control device.				