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AD-A242 928



**Worldwide
Environmental Compliance Assessment
and Management Program
(ECAMP)**

United Kingdom Supplement

U.S. Air Force

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91 1125 060

91-16447



REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave Blank)		2. REPORT DATE January 1991	3. REPORT TYPE AND DATES COVERED Final	
4. TITLE AND SUBTITLE Worldwide Environmental Compliance Assessment and Management Program (ECAMP) <i>United Kingdom Supplement</i>			5. FUNDING NUMBERS Project Order 89-05, dated January 1991, WU JE9	
6. AUTHOR(S) Catherine Demeroukas and Dr. Diane K. Mann				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Construction Engineering Research Laboratory (USACERL) 2902 Newmark Drive Champaign, IL 61821			8. PERFORMING ORGANIZATION REPORT NUMBER SR N-91/11	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) HQ USAF/LEEVO Bolling AFB WASH DC 20332-5000			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES Copies are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) <p>Because of the growing number of environmental laws and regulations worldwide, the U.S. Air Force has adopted an environmental compliance program that includes a mechanism to identify compliance problems before they become notices of violation by the U.S. Environmental Protection Agency or create non-compliance issues in host countries.</p> <p>In 1984, the U.S. Army Construction Engineering Research Laboratory, in cooperation with the Air Force Engineering and Services Center, began work on the Environmental Compliance Assessment and Management Program (ECAMP). The concept was to combine Federal, Department of Defense, and Air Force environmental regulations, along with good management practices and risk management issues, into a series of checklists showing not only the legal requirements, but also what specific items or operations to review. In addition, each question or protocol would list a point of contact to help assessors review the protocols as easily as possible.</p> <p>ECAMP was extended worldwide to incorporate environmental legislation in host countries. The United Kingdom ECAMP (UKECAMP) manual was developed using existing U.K. legislation as well as suggested management practices. It was tested at Lakenheath Air Base in 1990. The UKECAMP manual has been updated annually to meet new environmental compliance laws and regulations.</p>				
14. SUBJECT TERMS Environmental Compliance Assessment and Management Program (ECAMP)			15. NUMBER OF PAGES 200	16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT SAR	

Acknowledgments

We would like to acknowledge and thank Mr. Peter Howell and his associates of the Property Services Agency, Ministry of Defense, Cambridge, England, for their assistance during the development of this manual.

UNITED KINGDOM ENVIRONMENTAL COMPLIANCE ASSESSMENT MANUAL

INTRODUCTION

United States Air Force (USAF) Installations in the United Kingdom (U.K.) are the property of the Ministry of Defense (MOD) and are considered Crown Exempt for most laws and regulations. However, it is MOD policy to comply to the extent practicable and this exemption is rarely applied. All USAF installations in the U.K. are administered by 3AF and IAW 3AF Reg 85-3. Most operations and maintenance (O&M), engineering planning, project development and contract administration tasks normally associated with the Base Civil Engineering (BCE) are delegated to and executed by the Property Services Agency (PSA) which operates under considerable autonomy as the MOD estate agent. In addition, the MOD has a Royal Air Force (RAF) Commander at each installation to administer MOD specific programs and policy to the extent applicable. This individual is responsible for facility siting, community relations (to include community noise issues) and the management of natural and cultural resources.

The role of the USAF in specific matters relating to environmental compliance with regulations in this manual is to ensure that USAF personnel are afforded protection to their personal health commensurate with United States (U.S.) standards and that USAF operations conform to the applicable requirements of U.K. regulations.

Regulations in the U.K. are set up differently than those in the United States. Many environmental activities such as wastewater treatment, drinking water treatment, and waste disposal are regulated by permits; within these documents are the particular standards that must be achieved. Environmental laws in the U.K. such as the Pollution Control Act of 1974 give guidance on activities through codes of practice. Codes of practice are not regulations in the manner that the Code of Federal Regulations is for the U.S. but rather a guidance document to assist in achieving proper standards.

Particular standards may differ among installations as the national and local authorities set specific requirements for individual cases, especially in the areas of waste water discharges and air emissions. The evaluator will need to pay close attention to local requirements and incorporate them into the sections.

PROGRAM BACKGROUND

The United States Air Force (USAF) initiated the Environmental Compliance Assessment and Management Program (ECAMP) as a comprehensive self-evaluation and program management system for achieving, maintaining, and monitoring environmental management with environmental evaluations and management action plans at Air Force installations. The objectives of the ECAMP are to:

1. Improve Air Force environmental management
2. Build supporting financial programs and budgets for environmental requirements
3. Assure Major Commands (MAJCOMS), installation commanders, environmental protection committees, environmental coordinators, and bioenvironmental engineers, that their environmental programs are effectively addressing environmental problems that could:
 - a. impact mission effectiveness
 - b. jeopardize the health or safety of Air Force personnel or the general public
 - c. significantly degrade the environment
 - d. erode public confidence in the Air Force and the United States
4. Anticipate future environmental problems.

The ECAMP regulation, Air Force Regulation (AFR) 19-16, requires periodic internal and external environmental compliance evaluations. The evaluations are designed to assess environmental compliance and to provide necessary feedback to commanders for organizing, directing, and controlling environmental protection activities.

GOVERNING POLICY

Policy concerning environmental compliance at overseas installations is contained in the following:

1. Executive Order (EO) 12088
2. EO 12114
3. Department of Defense (DoD) Directive 5100.50
4. AFR 19-1
5. AFR 19-3
6. AFR 19-8.

ECAMP will assist the Air Force in implementing these policies. EO 12088, "Federal Compliance with Pollution Control Standards," requires the following:

1-801. The head of each Executive agency that is responsible for the construction or operation of Federal facilities outside the United States shall ensure that such construction or operation complies with the environmental pollution control standards of general applicability in the host country or jurisdiction.

1-802. Nothing in this order shall create any right or benefit substantive or procedural, enforceable at law by a party against the United States, its agencies, its officers, or any person.

ECAMP does not commit the Air Force to comply with host country law beyond the current obligation under EO 12088 and the status of forces agreement (SOFA).

EO 12114, "Environmental Effects Abroad of Major Federal Actions," requires every Federal agency with major Federal actions significantly affecting the environment of a foreign nation to use the following documents in connection with actions:

1. environmental impact statements
2. environmental studies related to the proposed action
3. environmental assessments, summary environmental analyses, or other appropriate documents.

DoD Directive 5100.50, "Protection and Enhancement of Environmental Quality," requires DoD components at locations outside the United States to conform at all times to the environmental quality standards of the host country, international agreements, and SOFA, and conform to the extent practical to the following:

1. comply with the spirit, as well as the letter, of the National Environmental Policy Act and all other Federal environmental laws, executive orders, and regulations
2. demonstrate leadership in environmental pollution abatement and enhancement of the environment.

AFR 19-1, "Pollution Abatement and Environmental Quality," sets up an environmental protection program. Air Force policy is to make sure facilities outside the United States territory are designed, constructed, and operated so as to comply with the substantive environmental pollution standards of general applicability in the host country.

AFR 19-3, "Environmental Impact Analysis Process (EIAP) Overseas," establishes the policies, procedures, and responsibilities for considering the effects on the environment by major Air Force actions outside the United States. It describes how the overseas EIAP is used to identify environmental impact to host nation territory, global commons, and/or protected global resources by major Air Force actions outside the United States, its

territories or possessions.

AFR 19-8, "Environmental Protection Committees and Environmental Reporting," establishes the Environmental Protection Committees (EPC) and assigns their responsibilities as a multidisciplinary approach to incorporate environmental concerns into the decision making process. It also details the environmental reporting procedures applicable worldwide which support the Air Force's pollution abatement program.

The ECAMP Compliance Assessment Manual for the United Kingdom is intended to serve as a supplement to to the World Wide ECAMP manual for conducting environmental compliance evaluations at Air Force installations located in the United Kingdom.

UNITED KINGDOM

Section I

Air Emissions Management

Section I

AIR EMISSIONS MANAGEMENT

A. Applicability

Installations in the United Kingdom (U.K.) that operate furnaces for energy or heat may be required to have permits to operate. Incinerators are also subject to regulation by local authorities.

B. United Kingdom Laws and Regulations

Policy on air pollution control is developed by the Department of the Environment, Scottish Office, Welsh Office, and Department of the Environment for Northern Ireland.

Air pollution control in the U.K. is divided between local and central governments. Local authorities are responsible for air pollution control including domestic emissions. The central government level is "Her Majesty's Industrial Air Pollution Inspectorate" which is appointed to the Health and Safety executive branch. Heavy industries are regulated by specialized control authorities. Local authorities control domestic emissions and emissions from commercial and industrial processes which are not covered by more specific regulations. The Department of Transportation controls the emissions from motor vehicles, ships, and aircraft.

The local authority is responsible for preventing "nuisances" of air pollution, and for eliminating existing nuisances.

Public Health Act 1936 and Public Health (Recurring Nuisances) Act 1969 Local authorities are responsible for implementing the nuisance provisions of these acts in order to prevent emissions and accumulations from being a health hazard or a nuisance. The 1936 act only applies when a nuisance occurs, but this was changed to some extent by the 1969 act, which allows local authorities to anticipate air nuisances, especially where an air nuisance might recur. These acts fill a useful gap in a miscellaneous nuisance controls which are not covered by more specific legislation, such as the Clean Air Acts.

Health and Safety at Work Act 1977 Requires that nuisances such as the emission of noxious substances be prohibited.

Clean Air Acts 1956 and 1968; Control of Smoke Act 1989 These acts control air emissions in particular, the smoke produced from fuel burning must be less

than shade 2 on the Ringelmann Chart.

Certain geographic areas may be designated as smoke control areas by local authorities. No smoke may be emitted in these control areas. Only authorized fuel may be burned in these areas, but unauthorized fuels that burn smokelessly may also be used.

Furnaces using solid fuels must prevent emissions of particulates by the best practicable means.

New chimney heights are also covered by this act. Local authorities are authorized to determine the height for new chimneys and for expansions on existing furnaces. The booklet entitled "Chimney Heights," last published in 1981, gives guidance for determining appropriate chimney heights.

The newest legislation Control of Smoke Pollution prevents the burning of any material at an industrial or trade premise that would create dark smoke. Fuels authorized for smoke control purposes are exempted. Nighttime burning is also regulated under this act making it the responsibility of the person burning to prove that no dark smoke was emitted.

Control of Pollution Act 1974 Air pollution is also regulated in Part VI of the Control of Pollution Act of 1974. Power to make regulations about the composition of liquid fuels for furnaces and engines is delegated to the Minister. As a result, limits on sulphur contents of grades of gas, oil, and on lead in petrol, have been set to meet the requirements of European Economic Community (EEC) directives. Local authorities can obtain information on emissions to air from industry. This information is published in registers which are open to the public and is presented in a manner that is understandable to the general public. The type of information that can be disclosed and the frequency of requests for information are detailed in the legislation.

C. EEC Regulations

The EEC has also produced regulations for air quality. These should be regarded as U.K. standards as well.

EEC Council Directive 85/2030/EEC, 7 March 1985, "Nitrogen Dioxide Quality Standards" Establishes air quality standards for nitrogen dioxide.

EEC Council Directive 80/779/EEC, 15 July 1980, "Sulphur Dioxide - Limit Values" Sets guidelines for particulates but does not set testing guidelines.

EEC Council Directive 82/884/EEC, 3 December 1982, "Lead -Limit Value"
Establishes lead concentration limits for air.

D. Key Compliance Definitions

- **Appointed Day** = such day as the Minister may by order appoint; different days may be appointed for different purposes, different areas, and different provisions of the Act.
- **Authorized Fuel** = a fuel declared by regulations of the Minister to be an authorized fuel for the purposes of the Act.
- **Building Regulations** = with respect to Scotland, any statutory enactments, by-laws, rules and regulations, or other provisions under whatever authority made relating to the construction, alteration, or extension of buildings.
- **Chimney** = includes structures and openings of any kind from or through which smoke, grit, dust, or fumes may be emitted and, in particular, includes flues; and references to a chimney of a building include references to a chimney that serves the whole or part of a building, but is structurally separate therefrom.
- **Dark Smoke** = smoke which, if compared in the appropriate manner with a chart of the type known at the date of the passing of this Act as the Ringelmann Chart, would appear to be as dark as or darker than shade 2 on the chart.
- **Day** = (except in the expression 'the appointed day') means a period of twenty-four hours beginning at midnight.
- **Fireplace** = includes any furnace, grate or stove, whether open or closed.
- **Fumes** = any airborne solid matter smaller than dust.
- **Guide Value** = is the concentration of a specified substance over a specified period of time that is intended to serve as long-term precautions for health and the environment and as reference points for establishment of specified schemes within zones determined by the member states of the EEC.
- **Heating** = in relation to a dwelling the term includes the heating of water.
- **Hire-Purchase Agreement** = with respect to England and Wales, has the meaning assigned to it by [section I of the Hire-Purchase Act 1965]; and, with respect to Scotland, means a [hire-purchase or conditional sale

agreement such as is mentioned in subsection (2) of section 2 of the Hire-Purchase (Scotland) 1965 (or that subsection as amended by section 3(I) of that Act), and "letting" shall be construed accordingly].

- **Industrial Plant** = includes any still, melting pot or other plant used for any industrial or trade purposes, and also any incinerator used for or in connection with any such purposes.
- **Limit Value** = the concentration of specified substance in the air that must not be exceeded.
- **Local Authority** = with respect to England and Wales, the council of a district or a London borough, the Common Council of the City of London, the Sub-Treasurer of the Inner Temple, and the Under Treasurer of the Middle Temple; and, with respect to Scotland, means an island or district council.
- **The Minister** = with respect to England and Wales, the Minister of Housing and Local Government; with respect to Scotland, the Secretary of State.
- **Owner** = with respect to Scotland, has the like meaning as in the Public Health (Scotland) Act 1987.
- **Practicable** = reasonably practicable having regard, amongst other things, to local conditions and circumstances, to the financial implications and to the current state of technical knowledge, and "practicable means" includes the provision and maintenance of plant and the proper use thereof.
- **Private Dwelling** = any building or part of a building used or intended to be used as such.
- **Schedule 1 Furnace** = a furnace of a boiler or an indirect heating appliance in which the material heated is a gas or liquid.
- **Smoke** = includes soot, ash, grit, and gritty particles emitted in smoke.

**AIR EMISSIONS MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	1-1 through 1-6 and 1-19 through 1-21	(1)(2)(3)
If the installation operates a furnace or boiler	1-7 through 1-16	(1)(2)(3)
If the installation has miscellaneous appliances for heating or cooking	1-17	(1)(2)
If the installation has domestic fire places in use	1-18	(1)(2)

***CONTACT/LOCATION CODE:**

- (1) BCE (Base Civil Engineering/Environmental Planning)
- (2) BEE (Bioenvironmental Engineering)
- (3) Air Pollution Source Operator
- (4) Fuels - Management Branch
- (5) Transportation - Maintenance Branch
- (6) LGS (Base Supply)
- (7) Morale, Welfare, and Recreation (MWR) auto hobby shop
- (8) Refrigeration shops (BCE)
- (9) Equipment Maintenance Squadron
- (10) AAFES (Army Air Force Exchange Service) gas station

COMPLIANCE CATEGORY: AIR EMISSIONS United Kingdom	
REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>1-1. Determine action or changes since previous environmental evaluation of air emissions.</p> <p style="text-align: center;">...</p> <p>1-2. Copies of appropriate Host Nation, and local regulations on air emissions should be maintained at the installation.</p> <p style="text-align: center;">...</p> <p>1-3. Local authorities may require periodic reports or information regarding the emission or the measurement of certain pollutants or other substances into the air unless the facility has been specifically exempted by the Crown. The requirements will be set forth in a notice (Control of Pollution Act 1974, Part IV; Pollution of the Atmosphere Section 80, and The Control of Pollution (Exempted Premises) 1977, Section 22).</p> <p style="text-align: center;">...</p>	<p>Obtain copies of previous reviews and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Look for copies of the following regulations: (1)</p> <ul style="list-style-type: none"> - Clean Air Act 1956 and amendments (1968) - Health and Safety at Work Act (1974) - Air Navigation Order (1986) - Highways Act 1980 - Smoke Control Areas (Exempted Fireplaces) Order 1970-1987 - Dark Smoke (Permitted Periods) Regulations - Clean Air Regulations - Building Regulations - Oil Fuel Regulations - Motor Fuel Regulations - Control of Atmospheric Pollution - Council Directive 72/306/EEC (OJ No L 190, 20.8.1972, p. 1) (Diesel Engines-emission of pollutants) - Council Directive 82/884/EEC (OJ No L 378, 31.12.1982, p. 15) (Lead-limit value) - Council Directive 85/203/EEC (OJ No. L 372, 31.12.1985, p. 36) (Nitrogen dioxide-Quality Standards) - Council Directive 80/779/EEC (OJ No. L 229, 30.8.1980, p.30) (Sulphur dioxide-limit values) - Council Directive 70/220/EEC (OJ No. L 76, 6.4.1970, p.1) (Motor vehicles-positive ignition engines) - any applicable Status of Forces Agreements (SOFA) - any appropriate local regulations <p style="text-align: center;">...</p> <p>Determine whether the installation has been required by notice to report air emissions. (1)(2)</p> <p>Confirm that requirements set forth in notice were complied with within six (6) weeks of the date notice was served. (1)(2)</p> <p>Examine copy of notice and verify that conditions and/or measurements set forth in the notice are being followed. (1)(2)</p> <p style="text-align: center;">...</p>

(1) Base Civil Engineering (BCE) Environmental Planning (2) Bioenvironmental engineering (BEE) (3) Air Pollution Source Operator (4) Fuels Management Branch (5) Transportation-Maintenance Branch (6) Base Supply

COMPLIANCE CATEGORY: AIR EMISSIONS United Kingdom	
REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>1-4. Emissions of noxious or offensive substances must be prevented (HSPA 1974, Section 5).</p> <p style="text-align: center;">...</p> <p>1-5. Dark smoke must not be emitted from any installation chimney (Clean Air Act, Section 1 [1956 and 1968]).</p> <p style="text-align: center;">...</p> <p>1-6. The amount of grit, dust, and fumes may be limited by a permit (Clean Air Act 1968, Section 2).</p> <p style="text-align: center;">...</p> <p>1-7. The quantity of grit and dust emitted from the chimneys of certain types of furnaces is regulated and must not exceed certain values (The Clean Air (Emission of Grit and Dust From Furnaces) Regulations 1971). (NOTE: These regulations do not apply to incinerators.)</p> <p style="text-align: center;">...</p>	<p>Determine if the installation has any facilities that emit noxious or offensive substances. (1)(2)</p> <p>If any such facilities exist, determine if the best practicable means have been taken to prevent the emissions or to ensure that they are harmless and inoffensive. (1)(2)(3)</p> <p style="text-align: center;">...</p> <p>Review any permits that set limits on smoke at the installation. (1)(2)</p> <p>Observe chimneys at the base for dark smoke (2 on the Ringelmann Chart).</p> <p>Review files for complaints about dark smoke from citizens or local authorities.</p> <p>Determine whether dark smoke is result of burning of exempted materials as specified in Schedule 1 and 2 of the Clean Air (Emission of Dark Smoke [Exemptions]) Regulations 1967.</p> <p>Determine if any problems still exist with the emission of dark smoke on the installation.</p> <p style="text-align: center;">...</p> <p>Determine if the installation has any permits that control the emission levels for grit, dust, and fumes.</p> <p>Determine if the requirements are being met.</p> <p style="text-align: center;">...</p> <p>Determine whether the installation operates a Schedule 1. (1)(2)(3)</p> <p>If the installation operates a Schedule 1 furnace, the quantity of dust and grit allowable are ascertained by heat output in pounds of steam per hour (from and at 100 °C (212 °F) or in thousands of BTU/hr designated as the Maximum Continuous Rating (MCR). See Appendix I-2 for allowable quantities. (3)</p> <p>Confirm that the proportion of grit particles exceeding 76 microns diameter in Schedule 1 furnaces that burn solid matter: (3)</p> <ul style="list-style-type: none"> - do not exceed 33% when the MCR does not exceed 16,800 lbs/hr of steam or 16,800,000 BTU/hr. - do not exceed 20% in all other cases. <p style="text-align: center;">...</p>

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**COMPLIANCE CATEGORY:
AIR EMISSIONS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>1-8. Any new furnaces or boilers installed on base must be as smokeless as practicable (Clean Air Act 1956, Section 3).</p> <p>(NOTE: This requirement does not apply to furnaces or boilers used for domestic purposes or for those with a maximum heating capacity less than 55,000 BTU/hr.)</p> <p align="center">...</p>	<p>Determine if the base has installed any new furnaces or boilers and if they are smokeless. (1)(2)</p> <p>Review requirements from local authorities regarding guidelines for new furnaces and boilers. (1)(2)</p> <p>(NOTE: Authorities may allow exemptions, review exemption certificate if applicable [Clean Air Act 1968, Section 4].)</p> <p align="center">...</p>
<p>1-9. Certain new furnaces may be required to be fitted with apparatus designed to arrest the output of pollutants or other materials (Clean Air Act (Arrestment Plan) Regulations 1969).</p> <p align="center">...</p>	<p>Determine if installation has installed any new furnaces. (1)(2)</p> <p>Determine whether new furnace(s) were fitted with required apparatus or were exempt as listed in Schedule 1 of the Clean Air (Arrestment Plan) (Exemption) Regulations 1969. (1)(2)(3)</p> <p align="center">...</p>
<p>1-10. Any new furnaces must limit the emission of grit and dust (Clean Air Act 1956, Section 6).</p> <p align="center">...</p>	<p>Determine if any new furnaces installed by the base have provisions to limit emission of grit and dust. (1)(2)(3)</p> <p>Determine if the furnace emissions have been approved by the local authority.</p> <p align="center">...</p>
<p>1-11. Furnaces may not be used to burn pulverized fuel or burn at a rate of more than one ton an hour any solid fuels or any form of solid waste unless the furnace is equipped with grit and dust arrestors that have been approved by the local authority. (Clean Air Act 1956, Section 6).</p> <p align="center">...</p>	<p>Determine the amount and type of fuel burned and if it meets these requirements. (1)(2)(3)</p> <p>If the furnace uses pulverized fuel or burns more than one ton an hour determine if it is equipped with grit and dust arrestors that have been approved by the local authority.</p> <p align="center">...</p>

(1) Base Civil Engineering (BCE) Environmental Planning (2) Bioenvironmental engineering (BEE) (3) Air Pollution Source Operator (4) Fuels Management Branch (5) Transportation-Maintenance Branch (6) Base Supply

**COMPLIANCE CATEGORY:
AIR EMISSIONS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>1-12. Installations that use furnaces that burn pulverized fuel, burn more than one ton an hour, or burn a rate of 1.25 million or more British thermal units an hour of any gas or liquid matter may be required by local authorities to monitor grit and dust emissions (Clean Air Act 1956, Section 7).</p> <p align="center">...</p>	<p>Determine if the installation has been served a notice by local authorities concerning grit and dust. (1)(2)(3)</p> <p>Review the notice for the following:</p> <ul style="list-style-type: none"> - frequency of measurements - types of recording devices used for measurement - retention of measurement results - improvements necessary to limit amount of grit or dust emissions. <p>Determine if the measuring apparatus is being maintained.</p> <p>Review results of measurements and determine if they have been sent to the local authority for review.</p> <p>Determine whether necessary improvements have been made</p> <p align="center">...</p>
<p>1-13. If served with a notice from the local authority the installation must provide them with information regarding the type of fuel burned in the base furnaces (Clean Air Act 1956, Section 8).</p> <p align="center">...</p>	<p>Determine if the base is required to submit information on the types of fuels burned. (1)(2)(3)</p> <p>If so, review a random number of reports submitted to the local authority.</p> <p align="center">...</p>
<p>1-14. If the installation is building or planning to build any new furnaces or boilers, the local authority must approve the height of the chimney (Clean Air Act 1968, Section 6).</p> <p align="center">...</p>	<p>Determine whether the installation has any plans to build a new furnace or boiler. (1)(2)</p> <p>If so, determine whether the local authority has approved the chimney height.</p> <p align="center">...</p>
<p>1-15. Local authorities can designate areas as "smoke control areas" (Clean Air Act 1956, Section 11).</p> <p align="center">...</p>	<p>Determine if the installation is in a smoke control area. (1)(2)</p> <p>If so, the base should make all attempts to prevent the emission of smoke from the furnaces. If the furnaces are emitting smoke, determine the following:</p> <ul style="list-style-type: none"> - whether the authority gave an exemption - whether the smoke was caused only by authorized fuel. <p align="center">...</p>

(1) Base Civil Engineering (BCE) Environmental Planning (2) Bioenvironmental engineering (BEE) (3) Air Pollution Source Operator (4) Fuels Management Branch (5) Transportation-Maintenance Branch (6) Base Supply

COMPLIANCE CATEGORY: AIR EMISSIONS United Kingdom	
REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>1-16. Installations may not use or acquire any unauthorized fuel if they are located in a smoke control area. (Clean Air Act 1968, Section 9).</p> <p style="text-align: center;">...</p>	<p>If the installation is located in a smoke control area, ensure that only authorized fuels are being used in the furnaces and boilers. (1)(2)(3)</p> <p style="text-align: center;">...</p>
<p>1-17. The installation of any appliance used for heating or cooking that discharges the products of combustion into the air, except those designed to use gas, coke, or anthracite as fuel, is prohibited (Atmospheric Pollution, the Building Regulations 1976, Part m(23)).</p> <p style="text-align: center;">...</p>	<p>Verify that any new heating or cooking appliances installed were: (1)(2)(3)</p> <ul style="list-style-type: none"> - designed to use gas, coke or anthracite; - exempt from the provisions of the Clean Air Act 1956 regarding Smoke Control Areas; or - solid fuel appliances with a bottom grate unsuitable for burning coke or anthracite but were designed to burn such fuel by the use of an alternate bottom grate. <p style="text-align: center;">...</p>
<p>1-18. Certain domestic fireplaces may be exempt from the provisions regulating smoke control areas (Atmospheric Pollution, Smoke Control Areas [Exempted Fireplaces] Order 1970).</p> <p style="text-align: center;">...</p>	<p>Determine whether the installation is in a smoke control area. (1)(2)</p> <p>Confirm that all domestic fireplaces used in the installation either conform to the regulations and requirements for smoke control areas or are in the classes of fireplaces exempt from those requirements as listed in Schedule I, Smoke Control Areas (Exempted Fireplaces) Order 1970. (1)(2)</p> <p style="text-align: center;">...</p>
<p>1-19. The installation may be required to measure and/or not exceed limit values and guide values for nitrogen dioxide emissions (EEC Council Directive of 7 March 1985, [85/203/EEC]).</p> <p style="text-align: center;">...</p>	<p>Determine whether the installation is required to measure and/or stay within the values set forth in EEC Council Directive of 7 March 1985, and if so, that those values are not being exceeded. (1)(2)(3)</p> <p style="text-align: center;">...</p>

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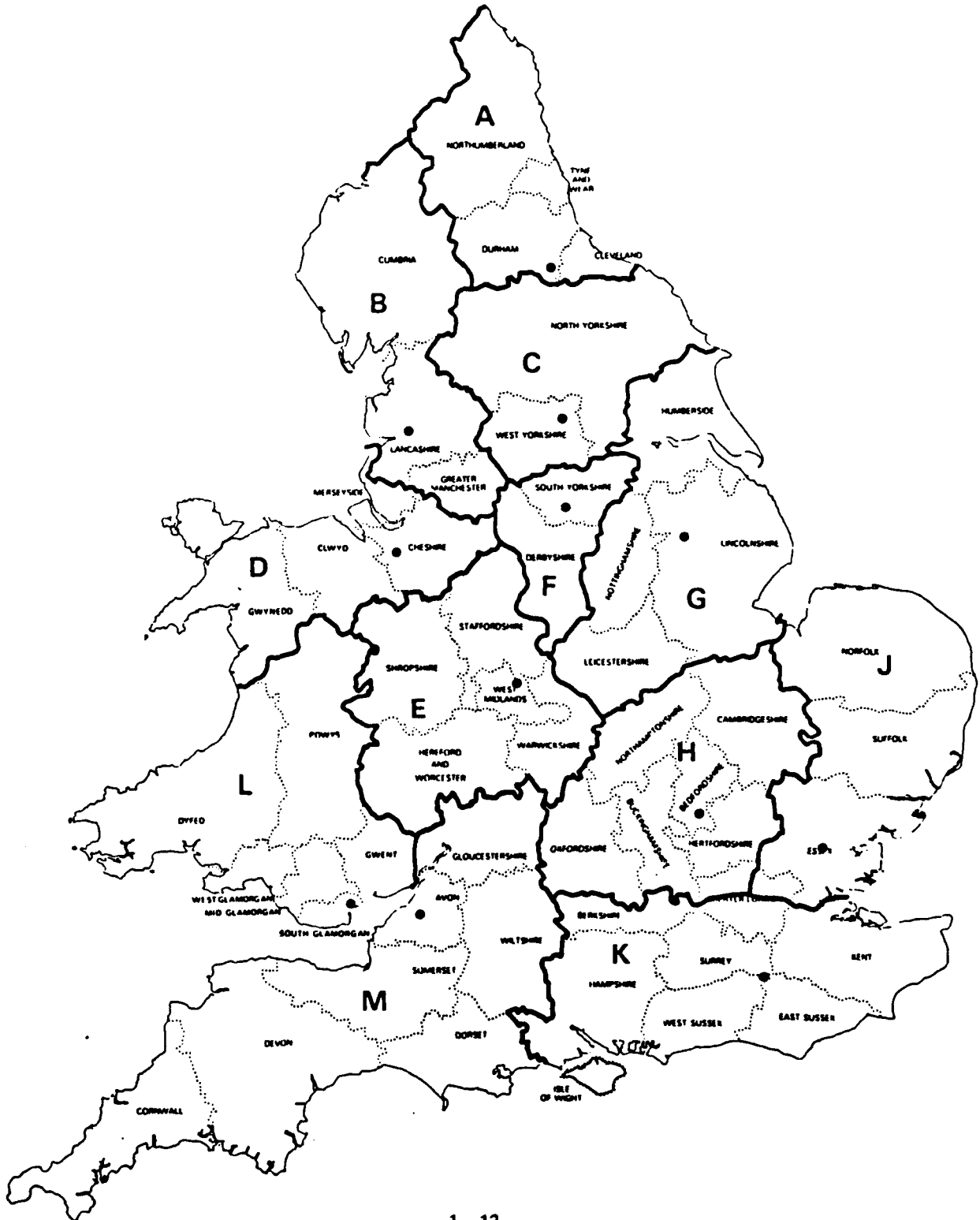
**COMPLIANCE CATEGORY:
AIR EMISSIONS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>1-20. The installation may be required to measure and/or not exceed certain values for sulfur dioxide and suspended particulate air emissions (EEC Council Directive of 15 July 1980 [80/779/EEC]).</p> <p align="center">...</p>	<p>Determine whether the installation is required to measure and/or stay within the values set forth in EEC Council Directive of 15 July 1980, and if so, that those values are not being exceeded. (1)(2)(3)</p> <p align="center">...</p>
<p>1-21. The installation may be required to stay within a limit value for lead in air emissions (EEC Council Directive of 3 December 1982 [82/884/EEC]).</p> <p align="center">...</p>	<p>Determine whether the installation is required to measure and/or stay within the values set forth in EEC Council Directive of 3 December 1982, and if so, that those values are not being exceeded. (1)(2)(3)</p> <p align="center">...</p>

(1) Base Civil Engineering (BCE) Environmental Planning (2) Bioenvironmental engineering (BEE) (3) Air Pollution Source Operator (4) Fuels Management Branch (5) Transportation-Maintenance Branch (6) Base Supply

Appendix I-1

Her Majesty's Inspectorate of Pollution (HMIP)
Air District Boundaries



Appendix I-2

SCHEDULE 1 FURNACES

Maximum Continuous Rating in pounds of steam per hour (from and at 100° C [212° F]) or in thousands of British thermal units per hour (1)	Maximum permitted quantities of grit and dust in pounds per hour	
	Furnaces burning solid matter (2)	Furnaces burning liquid matter (3)
825	1.10	0.25
1,000	1.33	0.28
2,000	2.67	0.56
3,000	4.00	0.84
4,000	5.33	1.12
5,000	6.67	1.4
7,500	8.50	2.1
10,000	10.00	2.8
15,000	13.33	4.2
20,000	16.67	5.6
25,000	20.00	7.0
30,000	23.4	8.4
40,000	30	11.2
50,000	37	12.5
100,000	66	18
150,000	94	24
200,000	122	29
250,000	149	36
300,000	172	41
350,000	195	45
400,000	217	50
450,000	239	54.5
475,000	250	57

INSTALLATION	COMPLIANCE CATEGORY: AIR EMISSIONS United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

UNITED KINGDOM

Section II

Hazardous Materials Management

Section II

HAZARDOUS MATERIALS MANAGEMENT

A. Applicability

This section applies to all installations that use and store hazardous materials (dangerous substances). Dangerous substances include items that are flammable, toxic, corrosive, or reactive.

B. United Kingdom Laws and Regulations

Hazardous materials are not specifically defined and are not regulated through any specific act or regulations, but there are several different acts that set out guidelines and limits for hazardous substances.

Health and Safety at Work Act (1974) covers any "work" and mandates that employers maintain safe working conditions for their employees. In 1986 the Health and Safety Act updated with "The Road Traffic (Carriage of Dangerous Substances in Packages etc) Regulations". This addition provided standards for transporting hazardous materials. It is mainly concerned with packaging standards.

Within the Health and Safety Act is the "Packaging and Labeling of Dangerous Substances" (Amendment) Regulations. These regulations set up a placarding system for transporting hazardous substances.

Notification of Installations Handling Hazardous Substances requires notifying the Health and Safety Executive before activities can commence on property. The regulation establishes a list and quantities of hazardous substances which are required to be reported.

The Factories Act regulates working conditions and also regulates highly flammable liquids and petroleum gases with emphasis on storing and marking of substances.

C. EEC Regulations

EEC Council Directive OJ No 196, 16.08.1967 (67/548/EEC), "Dangerous Substances -- Classification, Packaging, Labeling" Adopted through the Health and Safety Act. It develops standards for regulations relating to the classification, packaging, and labeling of dangerous substances.

EEC Council Directive OJ No L 230, 05.08.1982 (82/501/EEC), "Industrial Activities -- Major Accident Hazards" Adopted through the Factories Act. It provides a means to notify those outside an activity of potential hazards. It is similar in the idea of The Community Right to Know Act adopted in the U.S.

EEC Council Directive OJ No L 20, 26.1.1980 (80/68/EEC), "Groundwater -- dangerous substances" Sets requirements for preventing the contamination of groundwater by dangerous substances.

D. Key Compliance Definitions

The following definitions are from the various regulations and guidance notes for the U.K.

- Approved list = the list published by the Health and Safety Commission entitled "Approved Substance Identification Numbers, Emergency Action Codes and Classifications for Dangerous Substances conveyed in Road Tankers and Tank Containers".
- Aqueous Ammonia = ammonia gas dissolved in water.
- Carcinogenic = substances or preparations which, if they are inhaled or ingested, or if they penetrate the skin, may induce cancer or increase its incidence in humans.
- Commercial Butane = a hydrocarbon mixture consisting predominantly of butane, butylene, or any mixture thereof.
- Commercial Propane = a hydrocarbon mixture consisting predominantly of propane, propylene, or any mixture thereof.
- Consignor = a person who consigns for conveyance by road a substance that is dangerous for conveyance.
- Container = any receptacle, wrapper, and other form of packaging.
- Corrosive = substances and preparations that may destroy living tissues on contact.
- Dangerous for the Environment = substances and preparations whose use presents or may present immediate or delayed risks for the environment.
- Dangerous Concentration of Vapors = a concentration greater than the lower flammable limit of vapors.

- **Environment** = water, air, and land and their interrelationships as well as their relationships within living organisms.
- **The Executive** = Health and Safety Executive.
- **Explosive** = substances and preparations that may explode under the effect of flame, or that are more sensitive to shocks or friction than dinitrobenzene.
- **Extremely Flammable** = liquid substances and preparations having a flash point lower than 0 degrees Celsius and a boiling point lower than or equal to 35 degrees Celsius.
- **Fire Resisting Structure** = any building, part of a building, structure, cabinet, or enclosure constructed in conformity with a specification for fire resisting structures.
- **Flammable** = liquid substances and preparations having a flash point equal to or greater than 21 degrees Celsius and less than or equal to 55 degrees Celsius.
- **Flash Point** = determined in accordance with Schedule 5 of the Packaging and Labeling of Dangerous Substances Regulations.
- **Groundwater** = all water below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
- **Harmful** = substances and preparations which, if they are inhaled or ingested, or if they penetrate the skin, may involve limited health risks.
- **Hazard Warning Sign** = in relation to a dangerous substance, the sign specified in column 3 of Schedule 1 for the classification of the substance specified in column 2 of the same schedule.
- **Hazard Warning Panel** = the panel required under Regulation 14 and 15 in Schedule 3.
- **Hazardous Substance** = a substance specified in column 1 of Part I of Schedule 1 to these regulations, or substances of any class specified in column 1 of Part II of Schedule 1.
- **Highly Flammable** = any of the following other than (aqueous ammonia, liquefied flammable gas and a liquefied petroleum gas):

Any liquid, liquid solution, emulsion, or suspension which, when tested in

the manner specified in the Factories Act, gives off a flammable vapor at a temperature of less 32 degrees Celsius, and also supports combustion.

Substances and preparations that may become hot and finally catch fire in contact with air at ambient temperatures without any application of energy

Solid substances and preparations that may readily catch fire after brief contact with a source of ignition, and which continue to burn or be consumed after removal of the source of ignition, or

Liquid substances and preparations having a flash point below 21 degrees Celsius, or

Gaseous substances and preparations that are flammable in air at normal pressure, or

Substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

- **Industrial Activity** = any operation carried out in an industrial installation referred to in annex I, in EEC directive OJ No L 230, 05.08.1982, involving one or more substances capable of presenting major accident hazards; transport carried out within the establishment for internal reasons; and the storage associated with this operation within the establishment.
- **Installation** = a site or pipeline for which a notification is required under Regulation 3(1).
- **Irritant** = non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.
- **Label** = a label required under Regulation 16 as specified under Schedule 3.
- **Liquefied Flammable Gas** = any substance which, at a temperature of 20 degrees Celsius and a pressure of 760 millimeters of mercury, would be a flammable gas, but which is in liquid form as the result of an application of pressure or refrigeration or both.
- **Liquefied Petroleum Gas** = commercial butane, commercial propane, and any mixture thereof.
- **Major Accident** = (EEC definition) an occurrence such as a major emission, fire or explosion resulting from uncontrolled developments in the course of an industrial activity, leading to a serious danger to people, immediate or

delayed, inside or outside the establishment, and/or to the environment, and involving one or more dangerous substances.

- **Manufacturer** = any person in charge of an industrial activity.
- **Multi-Load** = a load consisting of two or more dangerous substances in separate compartments or tanks.
- **Operator** = in relation to a road tanker or other vehicle, a person who holds, or is required to hold (under section 60 of the Transport Act 1968) an operator's license for the use of that vehicle for the carriage of goods on roads; where no such license is required, the keeper of the vehicle.
- **Operator** = in relation to a tank container, the owner of the tank container (or his agent), if that person has a place of business in Great Britain, is identified as the owner of; is the agent of the owner of the tank container, is listed on the tank container itself or on a document carried on the vehicle, or if no person satisfies the requirements set out above, the operator of the vehicle on which the tank container is conveyed.
- **Packagings** = in relation to dangerous substances, the receptacle or any components, materials, or wrappings associated with the receptacle for the purpose of enabling it to perform its containment function.
- **Petroleum Filling Station** = as defined in Section 23 of the Petroleum Consolidation Act of 1928.
- **Petroleum Spirit** = as defined in in Section 23 of the Petroleum Consolidation Act of 1928
- **Preparation** = a substance prepared by a manufacturer mixing two or more substances.
- **Pressure Vessel** = the tank of a road tanker or a tank container used or intended to be used for the conveyance of dangerous substances at a pressure of more than 500 millibars above or below atmospheric pressure; or at a pressure of 500 millibars or less above atmospheric pressure if it is maintained at that pressure or less by artificial means and would rise above that pressure if such means were not employed.
- **Receptacle** = a vessel or innermost layer of packagings in contact with the hazardous substance and liable to be handled individually when the substance is used; includes any opener or fastener.
- **Road Tanker** = a goods vehicle with has a tank structurally attached to, or

an integral part of, the frame of the vehicle.

- **Single load** = a load consisting of only one dangerous substance (whether or not a substance that is not dangerous is being conveyed at the same time).
- **Site** = the entire area of land that is under the control of a person and includes pier, jetty, or similar structure whether floating or not; a structure whether floating or not which is within inland waters of Great Britain and which is under control of a person.
- **Substance** = chemical elements and their compounds as they occur in the natural state or as produced by industry, including any additives required to place them on the market.
- **Tank** = a vessel used for the conveyance by road of a liquid, gaseous, powdery, or granular material, or a sludge, in bulk; and so constructed that it can be securely closed (except for the purpose of relieving excessive pressure) during conveyance.
- **Tank Container** = a tank (whether or not divided into separate compartments) having a total capacity of more than 3 cubic meters other than the tank of a road tanker.
- **Toxic** = substances and preparations which, if they are inhaled, ingested, or if they penetrate the skin, may involve serious, acute, or chronic health risks, and possibly even death.
- **Very Toxic** = substances and preparations which, if they are inhaled, ingested, or if they penetrate the skin, may involve extremely serious, acute, or chronic health risks, and possibly even death.

**HAZARDOUS MATERIALS MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	2-1 through 2-4 and 2-29 through 2-30	(1)(2)(3)(4)(5)
If the installation transports hazardous materials	2-5 through 2-11	(1)(2)(4)(5)(7)
If the installation stores or distributes hazardous materials	2-12 through 2-27	(1)(2)(3)(4)(8)
If the installation has industrial activities	1-28	(1)(2)

***CONTACT/LOCATION CODE:**

- (1) Base Supply (LSG)
- (2) Base Civil Engineering (BCE)
- (3) Fire Department
- (4) Safety Officer
- (5) Bioenvironmental Engineering (BEE)
- (6) Disaster Preparedness Office

**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>2-1. Determine action or changes since previous review of hazardous material management.</p> <p align="center">...</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p>
<p>2-2. The installation should maintain a current file of applicable United Kingdom and local regulations on hazardous material management.</p> <p align="center">...</p>	<p>Examine file of regulations. Determine if the following documents are maintained and kept current: (1)(2)(3)(4)</p> <ul style="list-style-type: none"> - Local ordinances - SOFA agreements - Notification of Installations Handling Hazardous Substances Regulations 1982. - Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981 - Packaging and Labeling of Dangerous Substances Regulations 1978 - Notification of New Substances Regulations 1982 - Control of Pollution Act (Supply and Use of Injurious Substances Regulations 1980 - codes of practice. <p align="center">...</p>
<p>2-3. Installations with reportable quantities of hazardous substances must notify the Health and Safety Executive before any activity can take place on the property (Notification of Installations Handling Hazardous Substances 3(1-4).</p> <p align="center">...</p>	<p>Determine if the installation had notified the Health and Safety Executive about the reportable quantities of hazardous substances at the base. (1)(2)(5)</p> <p>Review records of substances kept at the base and determine if all sources of hazardous substances have been incorporated into calculations including: (1)(2)(5)</p> <ul style="list-style-type: none"> - quantities in pipelines within 500 meters of the property and connected to its operations. - any materials at other locations under control of the same person where the boundary of that location is within 500 meters of the site. - substances in any vehicle for storage purposes either at the site or within 500 meters. <p align="center">(Note : This does not apply to licensed waste disposal sites.)</p> <p align="center">...</p>
<p>2-4. If quantities of hazardous substances change, an update must be made to the Health and Safety Executive (Notification of Installations Handling Hazardous Substances Regulations 1982 Sections 4 and 5).</p> <p align="center">...</p>	<p>Review records of notification and determine if renotification was made when substance amounts were either increased or decreased. (1)(2)(5)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-5. Installations transporting hazardous substances must use vehicles and tanks that meet certain specifications [Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981].</p> <p align="center">...</p>	<p>Determine if the installation transports hazardous substances in vehicles and tank containers which meet the following requirements: (1)(2) (4)(5)</p> <ul style="list-style-type: none"> - is of proper design, adequate strength, of good construction from sound and suitable material - is suited to its purpose, noting: <ul style="list-style-type: none"> - - nature and circumstances of the journey - - whether it will interact with the properties of the hazardous substances being carried. - The carrying tank and its fittings must be: <ul style="list-style-type: none"> - - designed, constructed, and maintained to prevent any of the contents from escaping (except via safety devices) - - made of materials that will not interact with the properties of the hazardous substance being carried. <p align="center">...</p>
<p>2-6. Tanks, road tankers, and tank containers must be tested and examined for integrity before they can be used to convey hazardous substances (Conveyance of Dangerous Substances By Road 1982 7[1-7]).</p> <p align="center">...</p>	<p>Determine if installation tanks, road tankers, and tank containers are certified by competent person for proper testing. Examine documents certifying the vehicles and tanks. (1)(2)(4)</p> <p>The current report certifying the vehicle should contain the following information: (1)(2)(4)</p> <ul style="list-style-type: none"> - the date on which tests were performed - the date by which further testing must be done - a statement that the tank is suitable for the substance being conveyed. - a statement of maximum pressure (for pressure vessels). <p>Determine if tank fittings have been inspected for damage, modification or repairs. (1)(2)(4)</p> <p>Determine that the pressure stated for the pressure vessels has not been exceeded. (1)(2)(4)</p> <p align="center">...</p>
<p>2-7. Pressure vessels must have corrosion resistant plate with identifying information on it (Conveyance of Hazardous Substances 1983 7[8]).</p> <p align="center">...</p>	<p>Determine if corrosion resistant plates are on pressure vessels with the following information placed on it in indelible ink. (1)(2)(4)(5)</p> <ul style="list-style-type: none"> - name or identifying mark of the manufacturer - the serial number of the pressure vessel by which it can be identified by - the date of the last examination and test carried out in accordance with section 2(b) - maximum pressure that the vessel can be subjected to . <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-8. Any tank of a road tanker, or a tank container that has been damaged, modified, or repaired must be inspected and tested by a competent person before it can be used again (Conveyance of Dangerous Substances By Road 7[4-5]).</p> <p align="center">...</p>	<p>Determine if the installation has a procedure for testing tanks or tank containers that have been damaged, repaired, or modified. (1)(2)(4)(7)</p> <p align="center">...</p>
<p>2-9. Information pertaining to the substance being transported must be carried with the shipment (Conveyance of Dangerous Substances By Road 10[1-2]).</p> <p align="center">...</p>	<p>Determine if the installation provides information about the substance to be carried with the shipment. (1)(2)(4)(5)(7)</p> <p>Ensure that the information includes the following:</p> <ul style="list-style-type: none"> - the identity of the substance - the nature of the substance - dangers that the substance may give rise to - emergency action procedures for the substance. <p align="center">...</p>
<p>2-10. Proper safety precautions must be taken with vehicles transporting hazardous substances with an emergency action code ending with "E" (Conveyance of Dangerous Substances By Road 13[1-2]).</p> <p align="center">...</p>	<p>Determine if the following precautions are taken: (1)(2)(4)(7)</p> <ul style="list-style-type: none"> - vehicles not in transport are parked in a secure area - the vehicle is monitored by a competent person over the age of 18, exceptions to this requirement are as follows: <ul style="list-style-type: none"> - if the driver can show that the tanks are empty of the substance - those with identification numbers 1270 (petrol) are empty, or 1268 (toluene or petroleum distillate) with a flash point under 21°C is not being conveyed, or is empty. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-11. Road tankers and tank containers used to transport dangerous substances must use proper placarding (Conveyance of Dangerous Substances By Road 13[2] 14, 15).</p> <p>NOTE: Though section 17(2) specifically states that visiting forces are not required to comply with the placarding requirements, it is considered a good management practice for the transport of dangerous substances.</p> <p align="center">...</p>	<p>Determine if the following placarding procedures are used: (1)(2)(4)(5)(7)</p> <ul style="list-style-type: none"> - a hazard warning panel must be displayed on three sides of the vehicle (one on the rear and one on each side) - Determine that the panels are properly constructed, weather resistant, indelibly marked on one side only, and clear of obstructions. <p align="center">...</p>
<p>2-12. Installations may not distribute dangerous substances unless proper precautions are taken (Packaging and Labeling of Dangerous Substances Regulations 4, 5).</p> <p align="center">...</p>	<p>Determine if the supply of dangerous substances is properly designed, constructed, and secure so the contents will not escape under normal handling. (1)(2)</p> <p>Packages should be properly labeled and should have the following information present:</p> <ul style="list-style-type: none"> - name of the substance - name and address of the manufacturer, importer, wholesaler, or supplier - classification or risk from Schedule 1, column 2 - the symbol or symbols from Schedule 1 and/or 2 - indication of any risks as listed in column 3 of Schedule 1 (Note this does not apply to items less than 125 milliliters in volume and are not explosive, toxic, or corrosive.) - safety precautions. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-13. Installations that store highly flammable liquids must follow certain guidelines (Factories; Highly Flammable Liquid and liquefied Petroleum Gases 5, 8).</p> <p align="center">...</p>	<p>Determine if highly flammable liquids are stored properly: (1)(2)(4)</p> <ul style="list-style-type: none"> - in fixed storage tanks ; or - in closed vessels in open air and protected against direct sunlight; or - in closed vessels within a store room that is secure is fire resistant; or - within a workroom as long as the amount stored does not exceed 50 liters and is kept in a fire resistant cabinet. <p>Inspect areas observe that no doors to highly flammable substance storage areas are kept open. (1)(2)</p> <p>Look for spill prevention apparatus (dry drains, secondary containers, overpacks, absorbents). (1)(2)</p> <p>Ensure that all tanks and vessels are properly labeled "Highly Flammable" or "Flashpoint below 32 degrees Celsius" or other appropriate statement of flammability. (1)(2)</p> <p>(NOTE: Guidance note CS 2 from the Health and Safety Executive "The storage of highly Flammable liquids 1978" recommend storage in fixed bulk tanks that are well ventilated (stored in open areas) and visible so that leaks can be detected at early stages.)</p> <p align="center">...</p>
<p>2-14. Liquefied petroleum gas in tanks, vessels, and cylinders must be marked and stored properly (Factories; The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 [7]).</p> <p align="center">...</p>	<p>Inspect storage areas of liquefied petroleum gas and ensure that they are are stored in one of the following manners: (1)(2)(8)</p> <ul style="list-style-type: none"> - in underground reservoir or fixed tanks - in movable storage tanks in secure areas - within pipelines, pumps, or other portion of an enclosed pipeline system - in cylinders either in open air or a fire resistant storeroom. <p>Ensure that all items are are clearly marked "Highly Flammable LPG"</p> <p align="center">...</p>
<p>2-15. Storage areas of highly flammable substances should be located in areas that do not have or accept other substances that may ignite any vapors which accumulate (Factories; The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 [9]).</p> <p align="center">...</p>	<p>Examine area to ensure that cotton waste (such as rags) is kept in a closed metal container. (1)(2)(8)</p> <p align="center">...</p>

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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-16. Storage areas of highly flammable materials should have adequate safety features (Factories, The Highly Flammable Liquids and Liquefied Petroleum Gas Regulations [10-15, 17]).</p> <p align="center">...</p> <p>2-17. Tanks storing highly flammable liquids should be properly located. (Guidance Note CS 2 from the Health and Safety Executive, "The Storage of Highly Flammable Liquids" 1978).</p> <p align="center">...</p>	<p>Inspect storage areas to ensure that the following safety features are found: (1)(2)</p> <ul style="list-style-type: none"> - adequate ventilation (with safety features to prevent ignition) - pressure relief to prevent explosion - fire escape and fire fighting equipment - system to remove any buildup of residues from flammable materials - "NO SMOKING" warning signs and enforcement - all materials are properly handled, including the ignition and burning of material. <p align="center">...</p> <p>Tanks should be located away from buildings. NOTE: Distances can be lowered if additional fire protection is provided, such as fixed water spray cooling, fire equipment, or other suitable methods of preventing ignition. Additionally the distance can be reduced if the building adjacent has a fire resistant wall. (1)(2)(8)</p> <p>The tank should be located in an area where there is access for inspection and repairs.</p> <p>Discharge from above-ground tanks should be by pump not gravity flow.</p> <p>Tanks should be surrounded by a bund wall capable of containing 110% of the capacity of the largest tank within the bund.</p> <p>The bund must be impervious to liquid and be designed to withstand hydrostatic pressure.</p> <p>The height of the bund wall should be between 1 and 5 meters.</p> <p>The tanks should be situated on hardstand within the entire bund area and be sloped so any liquid spilled from the tank flows away from it.</p> <p>A drain system should be provided so any surface water or substance can be drained from the area. This drain should be capable of being closed when not in use and allow drainage to a separator to prevent any substances from reaching sewers.</p> <p>No combustible materials should be located in the area.</p> <p>Liquids stored within the same bund area must be compatible with each other.</p> <p>The physical layout of the tank area should allow access by fire fighters.</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-18. Tanks should be constructed of proper materials (Guidance Note CS 2 from the Health and Safety Executive, "The Storage of Highly Flammable Liquids" 20-23, 28-39).</p> <p align="center">...</p>	<p>Determine if tanks, fittings, and valves conform to with the following standards: (1)(2)(8)</p> <ul style="list-style-type: none"> - Tank should be constructed of steel or other material that is compatible with the chemical being stored. - It should have proper supports on concrete, masonry, or steel designed to prevent accumulation of water and to allow for contraction and expansion of the tank. - Horizontal tanks and exceeding 5000 liters (1000 gallons) should be secured on one end. - Tanks should have corrosion protection (particulars should be discussed with a specialist). - They should be leak tested before being put into use (including pipelines) - Pipeline connections should have a flange or coupling to connect with the delivery tanker. - Connections to the tank should be properly located so any spills from filling can be contained and away from sources of ignition. - The discharge end of the filling line should be placed in a manner that allows it to reach the lowest level of fluid to minimize static electricity. - The tank should have an atmospheric or pressure vacuum vent. - Any tanks which contain liquids with a flash point below 20° C should have a flame arrester on the vent outlet. - Every tank must have a gauge -an automatic is preferred to dipping. Where dipping is the only method, a dipping tube should be used and the tank should have a wear pad at the bottom. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-19. Portable containers such as drums and cans storing highly flammable liquids must be properly stored (Guidance Note CS 2 from the Health and Safety Executive Office "The Storage of Highly Flammable Liquids [40 - 57]).</p> <p align="center">...</p>	<p>Inspect storage areas for highly flammable liquids and determine if the following criteria are met for portable containers: (1)(2)(8)</p> <ul style="list-style-type: none"> - Stored in the open area; or in a suitable storage room, provided that they are separated from other buildings by at least 4 meters, and if this is not possible, they must be in a fire resistant building. - Containers in open storage must be at least 4 meters from the boundary fence or tank bund. - If the wall is fire resistant for a half hour containers can be placed against it if there is at least 1 meter from the top of the container to the top of the wall. - Containers should be on flat, impervious surfaces. - There should be some type of containment for the largest size drum within the storage area in case of an accidental leak or spill. This containment should allow the substance to drain away to a safe place. - Good housekeeping and spacing of drums allow for easy inspection, operation of vehicles, and responding to emergencies. - Materials in containers with minimal headroom for expansion should be stored in a covered area, protected from direct sunlight, - Ensure that no containers are stored within 2 meters of doors, glazed windows, ventilation openings, or open buildings. - Sole use buildings for the storage of highly flammable liquids do not have to be flame resistant if they are isolated from any walls of other buildings by at least 4 meters. - Storage of over 50 liters in a building used for other purposes must be kept in a separate store room with a fire resistances approved by the Her Majesty's Inspector of Factories. - Storage of under 50 liters in a building used for other purposes is acceptable provided the material is kept in a safe, fire resistant cabinet or bin. <p align="center">...</p>
<p>2-20. Storerooms used for highly flammable liquids must be properly constructed (Guidance Note CS 2 from the Health and Safety Executive, "The Storage of Highly Flammable Liquids" 49-55).</p> <p align="center">...</p>	<p>Determine if the following standards for storerooms are met in areas where highly flammable liquids are kept: (1)(2)</p> <ul style="list-style-type: none"> - Adequate containment for spills or leaks, such as a retaining sill, are present. - Ventilation is adequate. - In heated storerooms, screens should be placed in such a manner that drums or other containers cannot be placed near the heater. Under no circumstance should the heating be a form of potential ignition. - Storerooms that are built of fire resistant material may also use a pressure relief system. - No dispensing should take place within the storeroom area. - The storage of other materials, such as organic peroxides, cellulose nitrate, or highly toxic nonflammable substances, is strictly prohibited. <p align="center">...</p>

(1) Base Supply (LSG) (2) Base Civil Engineering (BCE) (3) Fire Department (4) Safety Officer (5) Bioenvironmental Engineering (BEE) (6) Disaster Preparedness Office

**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-21. Empty containers that previously stored highly flammable liquid must be properly stored (Guidance Note CS 2 from the Health and Safety Executive, "Storage of Highly Flammable Liquids" 56).</p> <p align="center">...</p>	<p>Look for empty containers - they should be stored in open air or in a storeroom for highly flammable liquids. (1)(2)</p> <p align="center">...</p>
<p>2-22. Sources of ignitions near highly flammable liquids should be prohibited (Guidance Note CS 2 from the Health and Safety Executive, "Storage of Highly Flammable Liquids" 58 - 59).</p> <p align="center">...</p>	<p>Inspect storerooms for "NO SMOKING" signs. (1)(2)</p> <p>Determine if the installation has a procedure to have repair work that generates heat (e.g., welding, electrical) within the storeroom completed in a safe manner.</p> <p align="center">...</p>
<p>2-23. Certain safety precautions must be taken to prevent spill, fire, or explosion (Guidance Note CS 2 from the Health and Safety Executive, "Storage of Highly Flammable Liquids" 67 - 76).</p> <p align="center">...</p>	<p>Determine if persons operating equipment such as forklifts are trained in spill prevention and cleanup. (1)(2)(3)(4)</p> <p>Examine a copy of the spill plan for storage areas.</p> <p>Inspect area for availability of proper equipment in the event of a spill, such as sandbags, emergency telephone numbers, etc.</p> <p>Look at containers for clear markings regarding their flammability.</p> <p align="center">...</p>
<p>2-24. Spontaneous combustion substances should be stored properly (Guidance Note CS 17 from the Health and Safety Executive "Storage of Packaged Dangerous Substances").</p> <p align="center">...</p>	<p>Inspect areas where spontaneously combustible materials are stored. (1)(2)</p> <p>Determine if they are stored in a proper manner:</p> <ul style="list-style-type: none"> - stored in the the open air - separated from flammable liquids, solids and other combustibles - - separation should be at least 5 meters with noncombustibles stored in the gap leaving a 3-meter-wide aisle for forklifts; or - - separation by fire resistant screens (30-minute burn time); or - - other method, such as automatic fire protection (sprinkler system) - at least 5 meters distance from corrosives. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-25. Dangerous substance storage areas must be designated as a "NO SMOKING ZONE", and should not have any other ignition sources (Storage of Packaged Dangerous Substances 14-16).</p> <p align="center">...</p>	<p>Inspect storage areas for the following: (1)(2)</p> <ul style="list-style-type: none"> - posted "NO SMOKING" sign - ensure that there is no equipment around that could be an ignition source, such as welding equipment, direct-fired heaters. <p align="center">...</p>
<p>2-26. Storage areas, where reasonable, should be used solely for the purpose of storing substances (GMP Storage of Packaged Dangerous Substances 16).</p> <p align="center">...</p>	<p>When inspecting storage areas look for signs of other activities such as: (1)(2)</p> <ul style="list-style-type: none"> - mixing, blending - repackaging - parking or maintenance of vehicles, including forklift trucks <p>These additional activities should be carried out in a separate building, a separate outdoor area.</p> <p>The storage area should be in an isolated portion of the building, by walls which extend to provide separation and are fire resistant for at least 30 minutes; it should be at least 3 meters away from any activity. Automatic sprinklers may also be used for fire prevention.</p> <p align="center">...</p>
<p>2-27. Substances should be segregated to prevent reactions (Storage of Packaged Dangerous Substances 18).</p> <p align="center">...</p>	<p>While inspecting storage areas determine whether substances have been properly segregated. (1)(2)</p> <p>Look for the following separations:</p> <ul style="list-style-type: none"> - separated as directed on the manufacturer label; or - if information is not available, material should be separated by class (toxic, corrosive, flammable, reactive). <p>Material storage areas should be labeled appropriately.</p> <p align="center">...</p>
<p>2-28. Installations with industrial activities may be required to have an on-site emergency plan (Control of Major Accident Hazards Regulations 1984; 10, 12; EEC Directive 82/501/EEC "Industrial Activities -- Major Accident Hazards").</p> <p align="center">...</p>	<p>Review files for on-site emergency plan. (1)(2)</p> <p>Determine whether local authorities have been involved in the development of the plan, and if locals who may be affected by an incident at the installation have been informed of the risks.</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>2-29. Installations may be required to comply with the standards "Control of Substances Hazardous to Health" (COSH).</p> <p align="center">...</p> <p>2-30. Installations may be required to take precautions to prevent certain substances from contaminating groundwater. (EEC Directive 80/68/EEC).</p>	<p>Though COSH is concerned with health issues, evaluators should attempt to evaluate working conditions for environmental hazards especially where hazardous substances are stored or used. (2)(4)(5)</p> <p align="center">...</p> <p>Determine whether specific requirements have been established for the storage of hazardous materials and the protection of groundwater. (2)(3)(4)(5)</p>

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INSTALLATION	COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MGT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS		

UNITED KINGDOM

Section III

Hazardous Waste Management

SECTION III

HAZARDOUS WASTE MANAGEMENT

A. Applicability

Special wastes (which are a subcategory of hazardous wastes) are regulated in the U.K through the Special Waste Regulations (Control of Pollution Regulations 1980). Particular requirements such as storage and treatment of these wastes are outlined in permits that are issued by the local authority.

Similar to US regulations, a manifest document is required for shipping special waste (see Appendix 3-1). The site in which the waste is to be disposed of must also be licensed to receive such wastes.

The manifest form is circulated among the local authority where the waste is generated, the generator, the transporter, the disposal facility, and the county authority where the waste is being disposed of or treated at.

When evaluating the hazardous waste protocol at U.K. installations, it is particularly important to review not only U.K. regulations, but also the policy provided by the US Air Force or Defense Reutilization Marketing Organization (DRMO) for removal of waste products for disposal.

B. United Kingdom Laws and Regulations

The Control of Pollution Act (CoPA) Regulates numerous areas pollution, one of which is special wastes. This act lays out the structure for the Waste Disposal Authority

The Control of Pollution (Special Waste) Regulations (1980) Control the disposal of a subcategory of hazardous wastes (special wastes). It establishes requirements for the parties involved in the disposal of special wastes.

C. EEC Regulations

(none were located for Hazardous Waste Management)

D. Key Compliance Definitions

- **Campsite** = land on which tents are pitched for the purposes of human habitation and adjacent lands used by those camping.
- **Clinical Waste** = (a) any waste that consists wholly or partly of human or animal tissue, blood, or any other body fluids, excretions, drugs, or other pharmaceutical products, swabs or dressings, or syringes or needles, or other sharp instruments, being waste which unless rendered safe may prove hazardous to any person coming into contact with it; (b) any other waste arising from medical, nursing, dental, veterinary, pharmaceutical, or similar practice, investigation, treatment, care, teaching, or research, or the collection of blood for transfusion, being waste which may cause infection to any person coming in to contact with it.
- **Construction** = includes improvement, repair, or alteration.
- **Container** = includes a container in or on a vehicle, and a receptacle within the meaning of Section 13.
- **Environmental Hazard** = if waste has been deposited or disposed of in such a manner, and in such a quantity (whether that quantity by itself or cumulatively with other deposits of the same or different substances) as to subject persons or animals to material risk of death, injury, or impairment of health, or as to threaten the pollution or contamination (whether in the surface or underground) of any water supply. Where waste is deposited or disposed of in any receptacle, whether sealed or not, this shall not of itself be taken to exclude any risk which might be expected to arise if the waste were not so deposited or disposed of.
- **Household Waste** = includes (a) waste from private dwelling, or apartment building; and (b) campsite waste. Items not considered household waste: any mineral or synthetic oil or grease, asbestos, and clinical waste.
- **Industrial Wastes** = (a) waste produced in the course of constructing, improving, repairing, or demolishing any building structure; (b) waste produced as a result of dredging operations; and (c) sewage deposited on land (except sewage deposited, whether inside or outside the curtilage of a sewage treatment works, as an integral part of the operation of those works, and sewage spread on land for agricultural purposes).

Exceptions to the definition of industrial wastes: (a) wastes from construction, demolition, etc., placed on a site prior to the same with permission; (b) waste ash; (c) waste produced from building demolition that is deposited on the same site; (d) waste from dredging operations for the purpose of land drainage or

the maintenance of a watercourse deposited along the water course; (e) waste produced from the maintenance of any park, sports field, garden, or any other recreation ground deposited and disposed of within the boundaries of the grounds where it was produced; (f) waste which is deposited for the sole purpose of research into the effect of waste on the natural environment or the performance of plant equipment; (g) waste deposited on the land (by the owner or with the owner's consent) for a period of time not exceeding one month (does not apply to transfer facilities); (h) waste placed in waste receptacles; (i) waste disposed of on the same site it was produced by use of a static plant that has a disposal capacity of no more than 200 kilograms; (j) waste disposed of as an integral part of the industrial process that produces it.

(NOTE: the exceptions above shall not apply to the deposit or disposal on land, or in a receptacle, of any substance [whether solid, semisolid or liquid] which is poisonous, noxious, or polluting, and the presence of which on the land or in the receptacle is liable to give rise to an environmental hazard.)

- Liquid Waste = waste that, in the conditions under which it is handled, will flow and can be transferred by pump (includes leachate from waste).
- Sewage Sludge = the residue produced at a sewage treatment works that is not discharged with the treated effluent.
- Special Wastes = a subset of hazardous wastes controlled under the Control of Pollution Act (Special Wastes Regs 1980) that have particular properties: acutely hazardous to a human after one exposure, acute toxicity as indicated by an LD₅₀, flashpoint < 21°C, capable of damaging skin or eyes on contact, pharmaceutical or medicinal in nature, or contain any of the listed substances in Schedule 1 (see Appendix 3-2).
- Waste Oil = mineral or synthetic oil that is contaminated, spoiled, or otherwise unfit for its original purposes.
- Waste Solvent = solvent that is contaminated, spoiled, or otherwise unfit for its original purpose.

**HAZARDOUS WASTE MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	3-1 through 3-3 and 1-11 through 1-14	(1)(2)(3)(5)
If the installation generates, transports, or disposes of special wastes	3-4 through 3-10	(1)(2)(3)(5)
If the installation generates, transports or disposes of controlled wastes	3-15 through 3-16	(1)(2)
If the installation has waste disposal permit	3-17	(1)(2)(5)(6)
If the installation operates a landfill	3-18 through 3-22	(1)(2)(5)(6)
If the installation operates an incinerator	3-23 through 3-29	(1)(2)(5)(6)
If the installation operates a transfer station	3-30	(1)(2)(5)
If the installation operates a waste recovery facility	3-31	(1)(2)(5)

***CONTACT/LOCATION CODE:**

- (1) Environmental Planning (BCE)
- (2) Defense and Reutilization Marketing Office (DRMO)
- (3) Accumulation Point Managers
- (4) Fire Department
- (5) Treatment, Storage, Disposal (TDS) Facility Officer
- (6) Safety Officer

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-1. Determine action or changes since last evaluation of hazardous waste management protocol.</p> <p align="center">...</p> <p>3-2. The installation should maintain a current file of United Kingdom and local regulations on Hazardous waste management.</p> <p align="center">...</p> <p>3-3. Local disposal authorities may need cooperation from the installation when they are developing or updating their disposal plans (Control of Pollution Act, Section 2).</p> <p align="center">...</p> <p>3-4. Installations that produce special waste must prepare six copies of the consignment note found in Appendix 3-1 (Schedule 2) before waste can be removed for disposal (CoPA Special Waste Regulations, Part II [4]).</p> <p align="center">...</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved.(1)</p> <p align="center">...</p> <p>Determine if the following documents are maintained and kept current at the installation:(1)</p> <ul style="list-style-type: none"> - Control of Pollution Act (1974) - Control of Pollution (Special Waste) Regulations (1980) - Town and Country Planning Act (1971) - applicable Status of Forces Agreement - applicable memorandums of agreement or policy letters - applicable local laws and ordinances. <p align="center">...</p> <p>Determine if the installation has been asked for information about waste generating activities by the local waste disposal authority and if information was provided.(1)</p> <p align="center">...</p> <p>Determine if the installation has produced hazardous waste and if it is still waiting for disposal.(1)(2)(3)</p> <p>Determine if prenotification of disposal was made using the proper forms.</p> <p>Examine records for consignment notes to determine if sections A and B of the form have been correctly filled out by the base.</p> <p>Determine if the note was delivered to the disposal authority in the area where the waste is to be disposed of less than one month but at least 3 days before the waste is suppose to be disposed of.</p> <p>The installation must furnish the copies of this form to the carrier of the waste in order to have portion C completed.</p> <p>Before the waste is taken, the producer completes part D.</p> <p>The installation keeps one copy and furnishes an additional one to the local waste disposal authority. The other three are given to the transporter.</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-5. Installations that transport special wastes must carry the consignment note to the place of disposal (CoPA Special Wastes, Part II [5]).</p> <p align="center">...</p>	<p>Determine if the installation is transporting special wastes and if they are using the consignment form while in transport. (1)(3)(5)</p> <p>A copy of the form with all sections completed (A-E) should be left with the disposer.</p> <p align="center">...</p>
<p>3-6. Installations that dispose of special wastes must complete the final section E of the consignment form (CoPA Special Wastes, Part II [6]).</p> <p align="center">...</p>	<p>Determine if the installation disposes of any special wastes.(1)(5)</p> <p>Determine if the last section of the form is completed and one is sent to the disposal authority for the area where the waste originated. The installation then keeps one for their records and gives the third back to the carrier for his records.(1)(5)</p> <p align="center">...</p>
<p>3-7. Installations that operate a waste disposal or treatment facility for special wastes may be required to have a license (CoPA, Section 3, 5, 6).</p> <p align="center">...</p>	<p>Determine if the installation is required to have a license for hazardous waste.(1)(5)</p> <p>If there is a license examine it for requirements and determine if the installation is complying with the requirements. Specifics can include:</p> <ul style="list-style-type: none"> - the length of license period - requirements of supervision by the license holder - the types and amounts of waste to be handled and their treatment method - record keeping requirements - precautions that must be taken in regard to the land - special additional requirements of the Town and Country Planning Act - hours of operation - any preparations required for the site before operations at the facility can begin. <p>Determine if the license has been reviewed within the past five years.</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-8. Installations that produce, transport, or dispose of special wastes must maintain a register of wastes disposed of (CoPA Special Wastes [13, 14]).</p> <p align="center">...</p>	<p>Review records for copies of consignment notes of waste generated at the site for at least 2 years.(1)(2)(3)(5)</p> <p>If the installation transports, copies should also be available for all waste transported for disposal for at least 2 years.</p> <p>Installations that dispose of waste must maintain copies of the consignment notes as long as the facility is operating (until the license is revoked or surrendered), after which the records should be given to the disposal authority.</p> <p>Disposal records must be made for any deposit of special waste on land, showing the location of where the waste was deposited. This record should be a site that is marked by a grid and includes the amount and composition of the waste.</p> <p align="center">...</p>
<p>3-9. Installations may be required to dispose of particular special wastes according to the waste management papers which address the waste.</p> <p align="center">...</p>	<p>Determine if the installation has an up-to-date file of waste management paper, which should include but are not limited to:(1)(5)</p> <ul style="list-style-type: none"> - Waste Management Paper No.9, Halogenated Hydrocarbon Solvent Wastes from Cleaning Processes - Waste Management Paper No.11, Metal Finishing Wastes - Waste Management Paper No.15, Halogenated Organic Wastes - Waste Management Paper No.18, Asbestos Waste - Waste Management Paper No.21, Pesticide Wastes - Waste Management Paper No.23, Special Wastes. <p align="center">...</p>
<p>3-10. A license is needed to store special wastes above the minimum quantities (CoPA 1988 Waste Management Paper No.4, page 8).</p> <p align="center">...</p>	<p>Determine if the installation stores enough hazardous waste to require a license.(1)(2)(3)(5)</p> <p>Review license for specific storage requirements and determine if they are being complied with.</p> <p align="center">...</p>
<p>3-11. Installations may temporarily store waste pending its disposal elsewhere without a disposal license if certain conditions are met (the Collection and Disposal of Waste Regulations 1988, Regulation 9, para. 15 and 17).</p>	<p>Determine if the following "nondisposal license" requirements are met. Installation deposits on the premises:(1)(2)(3)(5)</p> <ul style="list-style-type: none"> - liquid waste with a total volume not to exceed 23,000 liters in secure container - nonliquid waste with a total volume not to exceed 80 cubic meters in a secure container - nonliquid waste with a total volume not to exceed 50 cubic meters in a secure place. <p>Determine if the installation deposits outside the premises nonliquid waste with a total volume less than 50 cubic meters in a container for 28 days or less.</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-12. Installation waste disposal may be arranged through the collection authority (CoPA section 12).</p> <p align="center">...</p>	<p>Determine if installation refuse is disposed of through the collection authority.(1)(2)</p> <p>If so, determine if requirements set out by the local collection authorities are being met.</p> <p align="center">...</p>
<p>3-13. Installations that have waste collected under the jurisdiction of the collection authority may be required to use specific types of receptacles (CoPA Section 13).</p> <p align="center">...</p>	<p>Determine if this is a requirement for the installation.(1)(2)</p> <p>If so, determine if the proper receptacles are used.</p> <p align="center">...</p>
<p>3-14. Installations may have other arrangements for the collection and disposal of special wastes (CoPA).</p> <p align="center">...</p>	<p>Determine if the installation uses an alternate method for waste disposal, such as a private contractor.(1)(2)</p> <p>If so, determine if the waste is being sent to a licensed facility and that the facility license authorizes the particular type of waste to be disposed of.</p> <p align="center">...</p>
<p>3-15. Installations may be required to obtain a disposal license if they dispose of controlled wastes. For the hazardous waste section, review disposal of industrial wastes (the Collection and Disposal of Waste Regulation 1988, Regulation 6).</p> <p align="center">...</p>	<p>Determine whether the installation disposes of any of the following controlled industrial wastes:(1)(2)(3)(5)</p> <ul style="list-style-type: none"> - waste from premises used for maintaining vehicles, vessels, or aircraft - waste arising from construction or demolition - sewage or sewage sludge deposited on the land - clinical waste from other than private dwellings - waste which has previously formed part of any aircraft, vehicle, or vessel - waste removed from land on which it has previously been deposited (and any soil it has been in contact with) - leachate from waste deposit - poisonous or noxious wastes resulting from: <ul style="list-style-type: none"> - -mixing or selling paints - -laundering or dry cleaning - -developing photographic film or making prints - -selling petrol, kerosene, or similar substances - -waste oil or waste solvent. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
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REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-16. Installations that transport controlled wastes may need to be registered as carriers of controlled wastes (Control of Pollution (Amendment) Part 1, para. 1[1]).</p> <p>(NOTE: The transport of controlled wastes between facilities on the installation is exempt from this requirement.)</p> <p align="center">...</p>	<p>Determine whether the installation transports any controlled waste off-base.(1)(2)(3)(5)</p> <p>Examine certificate of registration (if required) to verify that installation has registered with waste disposal regulation authority as a carrier of controlled wastes and that registration has not expired.</p> <p align="center">...</p>
<p>3-17. Installations that hold waste disposal permits are subject to supervision by the local authority to ensure that no threat to human health or the environment occurs (CoPA, Section 9).</p> <p align="center">...</p>	<p>Determine if the installation is licensed as a waste treatment or disposal site.(1)(2)(5)</p> <p>Review base waste disposal records for reports from local authorities.</p> <p>Determine if the installation has created any circumstances that have threatened human health or the environment and if the problems have been corrected.(6)</p> <p align="center">...</p>
<p>3-18. Installations that operate landfills may be required to follow guidelines set by the Institute of Waste Management for landfill operations (Good Management Practice [GMP]; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Examine landfill permit and ensure that the landfill is being operated according to the guidelines.(1)(2)(5)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>3-19. Installation landfill operations should be inspected at regular intervals (GMP; Institute of Waste Management Publication No.11).</p> <p align="center">...</p>	<p>Determine if the following are reviewed:(1)(5)</p> <ul style="list-style-type: none"> - gates and fences - roads and access - notices and signs - general tidyness - cover <ul style="list-style-type: none"> - -availability - -proper usage - condition of cabins <ul style="list-style-type: none"> - -garage - -stores - -toilet - health and safety - mobile plant <ul style="list-style-type: none"> - -clean and grease - -tow chains - -fire extinguisher - -first aid kits - tip records - leachate control <ul style="list-style-type: none"> - -ditches - -pumps. <p align="center">...</p>
<p>3-20. Adequate training should be given to those who operate installation landfill machinery (GMP; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Interview landfill staff determine if they are knowledgeable about the operation of equipment and safety precautions.(1)(2)(5)(6)</p> <p>Determine if any training records are kept at the site; if so, examine them to determine if training has been kept current.</p> <p>Training should be done for emergency situations such as fire and explosion.</p> <p align="center">...</p>
<p>3-21. Installations that operate co-disposal landfills (the disposal of industrial waste with domestic waste) must follow appropriate separation techniques (GMP; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine if the landfill operators segregate reactive from nonreactive materials, including the use of separate disposal areas.(1)(2)(5)</p> <p align="center">...</p>

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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-22. Safety precautions must be taken at co-disposal sites to prevent injury (GMP; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine if the landfill has the following available for its workers:(1)(2)(5) (6)</p> <ul style="list-style-type: none"> - protective clothing - facility for decontamination - working eye-wash bottles - communications (i.e., two way radios) - procedure manual for emergency response. <p align="center">...</p>
<p>3-23. Installations that operate incinerators may be required to have a license to operate (CoPA; Waste Management Paper No.4).</p> <p align="center">...</p>	<p>Determine if the installation incinerator has a license and examine it for the following compliance criteria:(1)(2)(5)</p> <ul style="list-style-type: none"> - permitted waste types and amounts - storage and spill prevention requirements - staffing requirements, including number of persons, qualifications, and training. <p align="center">...</p>
<p>3-24. Installations that operate incinerators must follow certain procedures (GMP; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine if the following criteria are met before incineration takes place:(1)(2)(5)</p> <ul style="list-style-type: none"> - adequate information is available regarding the results of combustion of the waste - proper handling and storage system is in place for waste arriving at the site - procedures are established for compatibility testing of wastes before incinerating - correct grate and boiler conditions have been established for the wastes the plant will receive. <p align="center">...</p>
<p>3-25. Installations that operate incinerators must use trained personnel (GMP; Institute of Waste Management Publication No. 5).(1)(2)(5)</p> <p align="center">...</p>	<p>Determine if incinerator personnel have been trained to operate the plant.</p> <p align="center">...</p>

(1) Environmental Planning (BCE) (2) Defense and Reutilization Marketing Office (DRMO) (3) Accumulation Point Managers (4) Fire Department (5) Treatment, Storage, Disposal (TDS) Facility Officer (6) Safety Officer

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-26. Installations that operate incinerators must maintain records of wastes stored at the plant (CoPA; Waste Management Paper No.4 "The Licensing of Waste Facilities").</p> <p align="center">...</p> <p>3-27. Installations that use incinerators must have proper safety features (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p> <p>3-28. Installations with incinerators should routinely monitor the plant including flue gases (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Review records of wastes kept at the plant. (1)(2)(5)</p> <p>Compare records with substances waiting to be incinerated.</p> <p>Note any discrepancies, such as wastes that are not permitted to be incinerated.</p> <p>Examine wastes for proper labeling, including a unique number assigned to each drum and container.</p> <p>Chemical waste incinerators must have a chemist and adequate laboratory facilities on-site to ensure waste characteristics are correct before incineration.</p> <p align="center">...</p> <p>Determine whether the following are in place for the combustion chamber:(1)(2) (5)(6)</p> <ul style="list-style-type: none"> - a high and low temperature alarm system - low-flow alarm and auto-shutdown of waste input - purge cycle on flame-out sensor linked to purge cycle. <p>Determine whether the following are in place for the gas cleaning equipment:</p> <ul style="list-style-type: none"> - a high temperature alarm for the scrubbing tower exit gas plus an automatic shutdown of waste input - a low water flow alarm for the scrubbing tower - a pH control alarm for the scrubbing liquor - where required indicators or alarms for pressure drops across packed sections within the gas cleaning equipment. <p>Determine if the instrumentation includes a chart recording for combustion temperature and tail gas composition.</p> <p align="center">...</p> <p>Determine if the installation monitors the plant in agreement with the authorities.(1)(2)(5)</p> <p align="center">...</p>

(1) Environmental Planning (BCE) (2) Defense and Reutilization Marketing Office (DRMO) (3) Accumulation Point Managers (4) Fire Department (5) Treatment, Storage, Disposal (TDS) Facility Officer (6) Safety Officer

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>3-29. Operators of installation incinerators should be properly trained (GMP; Institute of Waste management Publication No. 5).</p> <p align="center">...</p>	<p>Determine if the operators are trained in the following areas:(1)(5)</p> <ul style="list-style-type: none"> - housekeeping practices - flammable material storage. <p>Determine if the operators understand the following procedures:</p> <ul style="list-style-type: none"> - checking composition of incoming wastes - appropriate preparation of materials before incineration - storage procedures - incineration procedures (including startup, steady state, normal shutdown, emergency shutdown) - operation of gas cleaning equipment - operation of subsidiary plant such as boiler, compressors, and emergency power supplies - maintenance operations, especially shutdown procedures and cleaning and repair of the combustion chamber - instructions for permit to work procedures (especially with regard to electrical isolation) - emergency equipment and procedures in the event of a fire or other dangerous occurrence. <p align="center">...</p>
<p>3-30. Installations that operate transfer stations may be required to have a license (CoPA; Waste Management Paper No.4).</p> <p align="center">...</p>	<p>Determine if the installation transfer station has a license and examine it for the following compliance criteria:(1)(2)(5)</p> <ul style="list-style-type: none"> - amount of waste permitted - types of waste permitted - record keeping requirements - storage capacity and input limits - waste segregation requirements. <p align="center">...</p>
<p>3-31. Installations that operate waste recovery facilities must be licensed (CoPA 1988, paras 5.48 -5.51).</p>	<p>Determine if the installation has a recovery facility license.(1)(2)(5)</p> <p>Examine license for types of waste permitted and records that are to be maintained and spill prevention/action plans.</p>

(1) Environmental Planning (BCE) (2) Defense and Reutilization Marketing Office (DRMO) (3) Accumulation Point Managers (4) Fire Department (5) Treatment, Storage, Disposal (TDS) Facility Officer (6) Safety Officer

Appendix III-1

United Kingdom Manifest

Waste on Land

SCHEDULE 2

Regulation 4

Department of the Environment/Welsh Office
Scottish Development Department

Serial No.

Producer's
Certificate

A

(1) The material described in B is to be collected from

and (2) taken to

Signed Name

On behalf of Position

Address and telephone Date

..... Estimated date of collection

Description
of the
Waste

B

(1) General description and physical nature of waste

(2) Relevant chemical and biological components and maximum concentrations

(3) Quantity of waste and size, type and number of containers

(4) Process(es) from which waste originated

Control of Pollution (Special Waste) Regs. 1980

Carrier's
Collection
Certificate
C

I certify that I collected the consignment of waste and that the information given in A(1) & (2) and B(1) & (3) is correct, subject to any amendment listed in this space:

I collected this consignment of at hours

Signed Name Vehicle registration No.

On behalf of

Address and telephone Date

.....

Producer's
Collection
Certificate
D

I certify that the information given in B & C is correct and that the carrier was advised of appropriate precautionary measures.

Signed Name Telephone Date

Disposer's
Certificate
E

I certify that Waste Disposal Licence No issued by Council, authorities the treatment disposal at

this facility of the waste described in B (and as amended where necessary at C). Name and address of facility.....

.....
This waste was delivered in vehicle (Reg.No.).....
at.....hours on (date)..... and the carrier gave

his name as..... on behalf of Proper instructions were given that the waste should be taken to

Signed Name Position

Date on behalf of

For use by
Producer/
Carrier/
Disposer

Appendix III-2

Special Wastes - listed substances

Control of Pollution (Special Waste) Regulations 1980 SI 1980 No.1709, Schedule 1, Part I

Acid and alkalis

Antimony and antimony compounds

Arsenic compounds

Asbestos (all chemical forms)

Barium compounds

Beryllium and beryllium compounds

Biocides and phytopharmaceutical substances

Boron compounds

Cadmium and cadmium compounds

Copper compounds

Heterocyclic organic compounds containing oxygen, nitrogen, or sulphur

Hexavalent chromium compounds

Hydrocarbons and their oxygen, nitrogen and sulphur compounds

Inorganic cyanides

Inorganic halogen-containing compounds

Inorganic sulphur-containing compounds

Laboratory chemicals

Lead compounds

Mercury compounds

Nickel and nickel compounds

Organic halogen compounds, excluding inert polymeric materials

Peroxides, chlorates, perchlorates, and azides

Pharmaceutical and veterinary compounds

Phosphorous and phosphorous compounds

Selenium and selenium compounds

Silver compounds

Tarry material from refining and tar residues from distilling

Tellurium and tellurium compounds

Thallium and thallium compounds

Vanadium compounds

Zinc compounds

A technical memorandum providing guidance on the interpretation of the definition of both general terms and as it relates to the listed substances is given in Waste Management Paper No 23, "Special Wastes: A technical memorandum providing guidance of their definition" (published by the Department of the Environment), 1981. This list is under constant review and changes can be expected.

Appendix III-3

Difficult Wastes

Annex B

Type of waste	Groups and Subgroups	Group code	Sub-group code
Inorganic acids	Hydrochloric acid	A10	
	Sulphuric acid	A20	
	Nitric acid	A30	
	Chromic acid	A40	
	Phosphoric acid	A50	
	Hydrofluoric acid	A60	
	Others	A90	
Organic acids and related compounds	All	B10	
	Aliphatic acids, e.g., formic, acetic and oxalic acids		B11
	Aromatic acids, e.g., benzoic, phthalic acids		B12
	Acid anhydrides, e.g., acetic, phthalic, and anhydrides		B13
	Acid chlorides, e.g., acetyl, benzoyl chlorides		B14
	Sulphonic acids		B15
	Others		B19
Alkalis	Alkali metals oxides and hydroxides, calcium oxide, proprietary alkaline cleaners	C10	
	Sodium and/or potassium hydroxides or oxides		C11
	Calcium oxide		C12
	Proprietary alkaline cleaners		C13
	Ammonia	C20	
	Others	C90	
	Calcium hydroxide Sodium and/or potassium carbonates		C91 C92
Toxic metal compounds	Cadmium	D10	
	Mercury	D20	
	Lead	D30	
	Arsenic	D40	
	Others	D90	
	Copper		D91
	Zinc		D92
	Barium (water soluble forms)		D98

INSTALLATION	COMPLIANCE CATEGORY: HAZARDOUS WASTE MGT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS		

UNITED KINGDOM

Section IV

Natural and Cultural Resources Management

Section IV

NATURAL AND CULTURAL RESOURCES MANAGEMENT

A. Applicability

Installations in the United Kingdom that contain areas, sites, monuments, or buildings of historic, architectural, traditional, artistic, or archaeological interest are required to obtain consent from the Secretary of State for the Environment (or other approved official) prior to any work that would result in the removal, damage, alteration, or disturbance of any such areas or structures.

Installations that contain bodies of water that support fish or shellfish populations must maintain certain water quality standards.

Installations that contain habitats of certain species of wild birds are required to maintain and prevent the destruction and pollution of the areas that contain those species.

B. United Kingdom Laws and Regulations

Protective laws concerning the preservation of sites and monuments fall into two distinct groups: those dealing with ancient monuments and those dealing with historic buildings. The Ancient Monuments and Archaeological Areas Act 1979 provides for the protection of monuments and sites of primarily archaeological interest. The Town and Country Planning Act 1971 protects historic buildings and conservation areas.

The protection of the landscape is treated differently in the respective parts of the United Kingdom. In England and Wales, the National Parks and Access to the Countryside Act 1949, the Countryside Act 1968, the Local Government Act 1972, and the Wildlife and Countryside Act 1981 provide protection for National Parks, Heritage Coasts, and Areas of Outstanding Natural Beauty. In Scotland, the Countryside (Scotland) Act 1967 and 1981 provides protection for National Scenic Areas. The Amenities Lands Act (Northern Ireland) 1965 and Access to the Countryside Order 1983 in Northern Ireland provide for the protection of the landscape.

The primary law concerning the conservation and preservation of fauna and flora is the Wildlife and Countryside Act 1981, which applies to England, Wales, and Scotland, but not to Northern Ireland.

The Secretary of State for the Environment publishes a list of scheduled

(protected) monuments and historic buildings.

Local authorities have powers to designate areas of archaeological importance, and local planning authorities are required to designate conservation areas.

The Ancient Monuments and Archaeological Areas Act 1979 Establishes the need for consent for any work that would result in demolition, damage, removal, repair, alteration, or disturbance of any scheduled monument. Empowers local authorities to designate areas of archaeological importance, and provides such areas with protection similar to that for scheduled monuments. Requires the Secretary of State for the Environment to compile and publish a list of scheduled monuments.

The Town and Country Planning Act 1971 Requires the Secretary of State for the Environment to compile a list of all buildings of special architectural or historic interest. Empowers local planning authorities with the responsibility of providing protection for those listed buildings, including the power to consent to or deny any work or any alteration by way of a permit. Requires local planning authorities to determine which parts of their area(s) are to be designated as conservation areas.

Wildlife and Countryside Act 1981 Assigns local authorities the right to establish guidelines concerning the habitat of any protected species or plant. Provides for the protection of designated natural areas. Provides for areas that are designated "sites of special scientific interest" which may occur on the installation because of careful land management practices.

C. EEC Regulations

The European Economic Community (EEC) has also set forth regulations for the protection of natural and architectural heritage and for the habitat of fish, shellfish, and certain species of wild birds. These should be regarded as United Kingdom standards as well.

Commission Recommendation 75/65/EEC, 20 December 1974, "to Member States concerning the Protection of the Architectural and Natural Heritage" Takes steps to improve the restoration and preservation of each member state's architectural and natural heritage areas.

EEC Council Directive 78/659/EEC, 18 July 1978, "The Quality of Fresh Waters Needing Protection or Improvement in Order to Support Fish Life" Sets guidelines for certain parameters for waters designated by the member state's as in need of protection.

EEC Council Directive 79/409/EEC, 2 April 1979, "The Conservation of Wild Birds" Covers the protection, management, and control of certain wild birds, including the protection of their eggs, nests and habitat.

EEC Council Directive 79/923/EEC, 30 October 1979, "The Quality Required of Shellfish Waters" Establishes standards for allowable levels of pollutants in designated shellfish waters.

D. Key Compliance Definitions

- **Ancient Monument** = a building, structure, or work, whether above or below ground (including caves or excavations) which, in the opinion of the Secretary of State for the Environment, is of public interest by the reason of historic, architectural, traditional, or archaeological interest.
- **Salmonid waters** = waters that support, or become capable of supporting, fish belonging to species such as salmon (*Salmo salar*), trout (*Salmo trutta*), grayling (*Thymallus thymallus*), and whitefish (*Coregonus*).
- **Conservation Area** = areas of special architectural or historic interest whose character and/or appearance are to be preserved and/or enhanced.
- **Cyprinid waters** = waters that support, or become capable of supporting, fish belonging to the cyprinids (Cyprinidae) or other species, such as pike (*Esox lucius*), perch (*Perca fluviatilis*), and eel (*Anguilla anguilla*).

**NATURAL AND CULTURAL RESOURCES
MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	4-1 through 4-2	(1)(2)
If the installation has water bodies	4-3 through 4-4	(1)(3)
If the installation has areas of natural habitat	4-5 through 4-6	(1)
If the installation has ancient monuments or historic buildings	4-7 through 4-8	(2)

***CONTACT/LOCATION CODE:**

- (1) Natural Resource Manager (or Environmental Coordinator)
- (2) Historic Preservation Officer (or Environmental Coordinator)
- (3) Bioenvironmental Engineering (BEE)

**COMPLIANCE CATEGORY:
NATURAL AND CULTURAL RESOURCES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>4-1. Determine action or changes since previous review of natural and cultural resources management.</p> <p align="center">...</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved.(1)(2)</p> <p align="center">...</p>
<p>4-2. The installation should maintain a current file of applicable United Kingdom and local regulations on natural and cultural resources.</p> <p align="center">...</p>	<p>Examine file of regulations. Determine if the following documents are maintained and kept current:(1)(2)</p> <ul style="list-style-type: none"> - Fresh Waters Quality for Fish, EEC Council Directive OJ No L 222, 14.8.1978, p 1 - Shellfish Waters-Quality, EEC Council Directive OJ No L 281, 10.11.1979, p 47 - Wild Birds-Conservation, EEC Council Directive OJ No L 103, 25.4.1979, p 1 - Ancient Monuments and Archaeological Areas Act 1979 - Town and Country Planning Act 1971 - Wildlife and Countryside Act 1981 - Any pertinent local regulations. <p align="center">...</p>
<p>4-3. Installation with fresh water ponds, lakes, or streams may be required to comply with the water quality standards set by the EEC Directive "Fresh Waters-Qualities for Fish" (Council Directives of 18 July 1978 [78/659/EEC]).</p> <p align="center">...</p>	<p>Determine if the installation has responsibility for maintaining any bodies of fresh water.(1)</p> <p>Interview installation bio-environmental engineer (BEE) to determine if water quality testing is done to ensure compliance with EEC standards.(1)(3)</p> <p align="center">...</p>
<p>4-4. Installations with water bodies that support shellfish life may be required to comply with the water quality standards set by the EEC Directive "Shellfish Waters-Quality" (Council Directives of 30 October 1979 [79/923/EEC]).</p> <p align="center">...</p>	<p>Determine if the installation has responsibility for maintaining any water bodies that support shellfish life.(1)</p> <p>Interview BEE to determine if water quality testing is done to ensure compliance with EEC standards.(1)(3)</p> <p align="center">...</p>

(1) Natural Resource Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator) (3) Bioenvironmental Engineering (BEE)

**COMPLIANCE CATEGORY:
NATURAL AND CULTURAL RESOURCES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>4-5. Installations may be required to maintain habitats of certain species of wild birds (EEC Council Directive of 2 April 1979, OJ No L 103, 25.4.1979, p.1 [79/409/EEC]).</p> <p align="center">...</p>	<p>Determine if the installation is required to maintain habitats for wild birds.(1)</p> <p>Interview environmental coordinator to determine if conservation efforts are made to prevent destruction of wild bird habitats.</p> <p align="center">...</p>
<p>4-6. Installations that contain areas designated for nature conservancy or any protected species must follow certain guidelines to preserve and maintain the area(s) (Wildlife and Countryside Act 1981).</p> <p align="center">...</p>	<p>Consult local authorities to determine if installation contains any areas designated as: (1)</p> <ul style="list-style-type: none"> - National Nature Reserves (NNRs) - Sites of Specific Scientific Interest (SSSIs) - Forest Nature Reserves (FNRs) <p>and verify that guidelines for these areas are being followed.</p> <p>Determine whether any protected species or plant (listed in the schedule in the Wildlife and Conservation Act 1981) are located on the installation, and that Nature Conservancy Council was consulted.</p> <p>Verify that appropriate requirements and guidelines for the specific protected plants and/or species are followed.</p> <p align="center">...</p>
<p>4-7. If the installation has an ancient monument or archaeological area located within its boundaries, certain activities are prohibited (The Ancient Monuments and Archaeological Areas Act 1979).</p> <p align="center">...</p>	<p>Determine whether installation has any scheduled ancient monuments within its boundaries. (Consult publication of scheduled monuments.(2)</p> <p>Determine whether consent from the Secretary of State for the Environment was obtained prior to any work that:</p> <ul style="list-style-type: none"> - would result in the demolition, destruction, or damage to a scheduled monument; - would involve removal, repair, or extensive alteration of a monument; or - would result in the flooding or dumping on or near a scheduled monument. <p>Consult local authorities to determine whether the installation has any archaeological areas within its boundaries.</p> <p>Determine whether specific arrangements with local authorities and/or Secretary of State have been approved prior to:</p> <ul style="list-style-type: none"> - any work that would disturb the ground - any work involving flooding of, or dumping on, the area. <p align="center">...</p>

(1) Natural Resource Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator) (3) Bioenvironmental Engineering (BEE)

**COMPLIANCE CATEGORY:
NATURAL AND CULTURAL RESOURCES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>4-8. Installations that contain historic buildings must follow certain guidelines (Town and Country Planning Act 1971).</p>	<p>Determine whether installation has any historic buildings located within its boundaries by reviewing the listing compiled by the Historic Buildings and Monuments Commission, and by consulting local planning authorities.(2)</p> <p>Consult local planning authorities to determine if any buildings on the installation are subject to any building preservation notices.</p> <p>Verify that local planning authority has been consulted, and permission has been granted, prior to any demolition or alteration (internal and external) of any listed structure.</p> <p>Consult local planning authorities to determine if the installation contains any or part of a conservation area.</p> <p>Verify that local planning authorities are consulted prior to the demolition of any structure within the Conservation Area.</p>

(1) Natural Resource Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator) (3) Bioenvironmental Engineering (BEE)

INSTALLATION	COMPLIANCE CATEGORY: NATURAL & CULTURAL RESOURCES MGT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

UNITED KINGDOM

Section V

Noise Management

SECTION V

NOISE MANAGEMENT

A. Applicability

Air Bases in the United Kingdom may be subject to noise controls set up by local authorities. These restrictions may stem from complaints or the need to observe long-established quiet hours and areas.

B. United Kingdom Laws and Regulations

The Control of Pollution Act (CoPA), Section III, legislates the control of noises. This portion of the CoPA has three different aspects: Code of Practice for Construction Sites, Appeals, and Measurements and Registers.

This legislation sets up a procedure for local authorities to designate activities as noise nuisances. When noise is considered to be a nuisance, the person responsible can be served with a notice to prohibit or restrict it.

This localized process is an important aspect for those who review noise management. When discussing noise management with personnel determine whether the installation has been served with any notices and whether it is a recurrent complaint. It is also important to establish which offices handle notices from United Kingdom authorities i.e. whether it is Base Civil Engineering (USAF), the Property Services Agency (United Kingdom), or the Royal Air Force liaison officer stationed at the base..

C. EEC Regulations

(none located for Noise Management)

D. Key Compliance Definitions

- Addition of Sound Pressure Levels = the sound pressure of the two sounds acting together is not the simple sum of the two separate levels. In short, if the difference is greater than 10 dB, the higher level is the sound to be taken. If the two sources are the same, (i.e., no difference), then 3 dB is added so the combined total is 3 dB higher than the individual levels (see Control of Noise [Measurement, etc.] Regulations 1976, para. [40], *post* and the Noise Levels (Measurements and registers) (Scotland) Regulations 1982, para [53], *post*).
- Construction Site Noise = measured in L_{eq} by a noise average meter.

- Corrected Noise Level (CNL) = an index of industrial noise (see B.S. 412 1967). When a well established background noise level is available and the background noise level exceeds the corrected criterion by less than 10 dBA, complaints may be expected if either L_{10} or L_{50} or both exceed the corrected criterion by 10 dBA or more; excesses of 5 dBA or less are of marginal significance. When an Environmental Health Officer has a complete picture of the situation he can confirm whether the complaint is justified or not and can calculate the attenuation that will be required to bring the noise level down to a reasonably acceptable level. If there is any doubt about the noise source, the officer can compare the octave analysis with that of machines in adjoining factories, and can in any case indicate the offending machine or machines and advise on the abatement procedures necessary.
- Effective Perceived Noise (EPN dB) = perceived noise (PN) dB is adjusted to take account of pure tones in the noise and the length of time the higher noise levels are experienced.
- Frequency = the rate at which the fluctuations occur. (Note: Most sounds have components at many frequencies. Some sounds are mostly high frequency [e.g., whistles] and others are mostly low frequency [e.g., booms]. See loudness; measured by octave band analyzer.)
- L Values [L_{10} , L_{50} , etc.] = (18 hours) is used as an index of road traffic noise. The arithmetic average hourly value of the noise in dBA exceeded for just 10% (or 90%, or any other %) of the time during the hours of 6 a.m. to midnight on a normal weekday. Peak noise correlates with dissatisfaction. For this reason the L_{10} (18 hour) was chosen by the Government as an index for Land Compensation Act 1973. Likewise, L_{50} is for Noise Abatement Zones.
- Leq = the equivalent continuous sound level in dBA over a given period measured by a noise average meter. (See Control of Noise [Measurement, etc.] Regulations 1976, Schedule, para. 9, para [40], *post*, and Noise levels (Measurement, etc.) (Scotland) Regulations 1982, para. [53], *post*.)
- Local Authority = in England and Wales, the council of a district or a London borough, the Sub-Treasurer of the Inner Temple and the Under treasurer of the Middle Temple; in Scotland, an island or district council.
- Noise and Number Index (NNI) = a measure of peak perceived noise levels related to the number of aircraft heard during a given period.
- Perceived Noise Level (PN dB) = noise from aircraft engines has predominant components in particular frequency bands, so measurements in dB are

made in each of a restricted number of frequency bands; from these, a total level is calculated emphasising the predominant components. Generally, values of PN dB are higher than dB(A) for the same sound, possibly by an order of 13.

- **Sound** = a periodic fluctuation of air pressure.
- **Sound Pressure** = the amount by which the air pressure changes; measured by a sound meter.
- **Vibration** = measured by a piezoelectric accelerometer (vibration), meter or a suitable sound level meter plus accelerometer and integrator (in place of microphone), or frequency analyzer or spectrometer. The ultimate instrument is a real-time analyzer with digital output and remote control facilities so it can be connected to a tape punch, computer, etc., to give a fully automatic analysis system.

**NOISE MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	5-1 through 5-7	(1)(2)(3)

***CONTACT/LOCATION CODE:**

- (1) Environmental/Community Planning (BCE)
- (2) Deputy for Operations (Airspace Manager)
- (3) Public Affairs Officer
- (4) Range Operating Agency

**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>5-1. Determine actions or changes since previous review of noise management.</p> <p style="text-align: center;">...</p>	<p>Obtain copy of previous review and determine if noncompliance issues have been resolved.(1)(3)</p> <p style="text-align: center;">...</p>
<p>5-2. The installation should maintain a current file of United Kingdom and local regulations on noise management.</p> <p style="text-align: center;">...</p>	<p>Determine if the following documents are maintained and kept current at the installation:(1)</p> <ul style="list-style-type: none"> - Control of Pollution Act 1974, Part III - Civil Aviation Act of 1982 - applicable Status of Forces Agreements - applicable local laws and ordinances. <p style="text-align: center;">...</p>
<p>5-3. Installations with aircraft or helicopters may be limited or prohibited by the Secretary of State from allowing the take-off or landing of certain aircraft during certain periods (Civil Aviation Act of 1982, S. 78).</p> <p style="text-align: center;">...</p>	<p>Determine whether Secretary of State has published a notice limiting aircraft take-off or landing at the installation.(1)(2)(3)</p> <p>Confirm that requirements of the notice are being complied with.</p> <p style="text-align: center;">...</p>
<p>5-4. Noise abatement zones are designated by the local authorities and are subject to certain requirements (Control of Pollution Act 1974: Pollution by Noise, S. 63 - 65).</p> <p style="text-align: center;">...</p>	<p>Determine whether installation has contacted local authorities to determine if installation is located within a noise abatement zone.(1)(3)</p> <p>Determine whether noises from the installation are of the type addressed in the noise abatement order.</p> <p>Confirm that monitoring has taken place to verify that noise levels specified in the noise level register are not exceeded (if applicable).(1)(2)(3)</p> <p style="text-align: center;">...</p>
<p>5-5. Installations may be required by local authorities to obtain prior consent in the form of a warrant for construction work that will result in environmental noise (Control of Pollution Act of 1974: Pollution by Noise 60 & 61).</p> <p style="text-align: center;">...</p>	<p>Determine whether the installation is involved in any construction.(1)</p> <p>Determine whether an application for warrant has been requested by the local authorities. If so, review it for:</p> <ul style="list-style-type: none"> - list of methods to be used in the construction work - steps proposed to minimize noise. <p style="text-align: center;">...</p>

(1) Environmental/Community Planning (BCE) (2) Deputy for Operations (Airspace Manager) (3) Public Affairs Officer (4) Range Operating Agency

**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>5-6. Noise levels from the installation must be measured following certain procedures (The Control of Noise [Measurement and Registers] Regulations 1976).</p> <p align="center">...</p> <p>5-7. Local authorities may regulate the time of day and level to which noise must be reduced (Control of Pollution Act 1974, Part III, Section 66).</p> <p align="center">...</p>	<p>Confirm that noise level is measured as specified in the Control of Noise Regulations 1976 Schedule, "Memorandum on Measurement and Calculation of Noise Levels."(1)(3)</p> <p align="center">...</p> <p>Determine whether the installation has been served with a noise reduction notice.(1)(3)</p> <p>Examine the notice to verify that noise levels and permitted hours of operation specified in notice are being complied with (if applicable).</p> <p align="center">...</p>

(1) Environmental/Community Planning (BCE) (2) Deputy for Operations (Airspace Manager) (3) Public Affairs Officer (4) Range Operating Agency

INSTALLATION	COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MGT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

UNITED KINGDOM

Section VI

Pesticide Management

Section VI

PESTICIDE MANAGEMENT

A. Applicability

Installations in the United Kingdom that store or apply pesticides are subject to regulations concerning the proper handling, application, and storage. Only approved pesticides may be used, and the installation may be required to obtain permission from local authorities prior to application. The disposal of pesticides may only be done by authorized waste disposal contractors.

B. United Kingdom Laws and Regulations

Policy on control of pollution by pesticides is contained in the Control of Pollution Act, 1974, which regulates the storage, use, application, and disposal of pesticides on land.

Water Authorities (River Purification Boards in Scotland) are responsible for and have authority to regulate activities that affect the quality of inland waters, including underground waters. Application of pesticides to water requires agreement by the appropriate water authority prior to application of any pesticide.

Control of Pollution Act 1974, Pollution of Inland Waters and Waste on Land Requires that fertilizers and pesticides be stored away from water sources, storage facilities to be secure, regulates the use of appropriate equipment when applying pesticides, provides for the proper cleaning, storage, and disposal of empty pesticide containers and equipment, and requires authorization from local water authorities prior to application of any herbicide.

C. EEC Regulations

(none located for Pesticide Management)

D. Key Compliance Definitions

- **Pest** = any organism harmful to plants, wood, or other plant products; any undesired plant, and/or any harmful creature.
- **Pesticide** = any substance, preparation, or organism prepared or used for destroying any pest, including undesired plants (herbicides).

- **Pesticide Residue** = any substance resulting from the use of a pesticide, including any derivative of a pesticide.

**PESTICIDES MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	6-1 through 6-3	(1)(2)(4)(5)(8)
If the installation uses pesticides or fertilizers	6-4 through 6-15	(1)(2)(4)(5)(7)(8)
If the installation has expired or unusable pesticides	6-16 through 6-17	(1)(2)(4)(5)(7)

***CONTACT/LOCATION CODE:**

- (1) Base Civil Engineering (BCE)
- (2) Bioenvironmental engineering (BEE)
- (3) Base Medical Services - Environmental Health Section (EHO)
- (4) Pest Management
- (5) Golf Course Maintenance
- (6) Base Fire Chief
- (7) Base Contracting Office
- (8) Base Supply (LGS)

**COMPLIANCE CATEGORY:
PESTICIDES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>6-1. Determine actions or changes since previous review of pesticide management.</p> <p>(NOTE: The term "PESTICIDES" in this protocol refers to both pesticides and herbicides unless indicated otherwise.)</p> <p align="center">...</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p>
<p>6-2. The installation should maintain a current file of applicable United Kingdom and local regulations on pesticide management.</p> <p align="center">...</p>	<p>Examine the file of regulations. Determine if the following are maintained and kept current: (1)(2)</p> <ul style="list-style-type: none"> - Control of Pollution Act 1974; Pollution of Inland Waters - Control of Pollution Act 1974; Waste on Land - Ministry of Agriculture, Fisheries and Food (M.A.F.F.) Booklet 2198, "Guidelines for the Disposal of Unwanted Pesticides and Containers on Farms and Holdings" (revised 1984), Control of Pollution Encyclopaedia, Issue 23 - Applicable Status of Forces Agreements. <p align="center">...</p>
<p>6-3. Fertilizers should be stored away from water sources such as lakes, streams, or over drains (Control of Pollution Act 1974; Code of Good Agricultural Practices, 1.3).</p> <p align="center">...</p>	<p>Inspect storage areas for fertilizers. Determine whether they are adequately stored away from water sources. (4)(5)(8)</p> <p align="center">...</p>
<p>6-4. Pesticides can only be used for their designated purpose (Control of Pollution Act 1974; Pollution of Inland Waters, 4.2).</p> <p align="center">...</p>	<p>Review pesticides available at the installation, and their designated use. (4)(5)(8)</p> <p>Determine if the installation uses the Pesticide Safety Precautions Scheme (PSFS).</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
PESTICIDES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>6-5. Pesticides must be stored in a well kept facility that is secure from unauthorized personnel, free from foodstuffs, well ventilated, dry, and frost-free (Control of Pollution Act 1974: Waste on Land 4.1, Pollution of Inland Waters 4.4).</p> <p align="center">...</p>	<p>Inspect pesticide storage buildings to determine if the area is dry, ventilated, and secure. (1)(4)(5)</p> <p>If liquid pesticides are used, confirm that adequate protection is provided to prevent spills from reaching soil or water.</p> <p align="center">...</p>
<p>6-6. Appropriate equipment must be used when applying pesticides (Control of Pollution Act 1974; Pollution of Inland Waters 4.6 and 4.7).</p> <p align="center">...</p>	<p>Inspect equipment used to apply pesticides for upkeep. (1)(4)(5)</p> <p>Inspect mixing area; verify that the area is away from any water source.</p> <p>Interview staff to determine: (1)(4)(5)</p> <ul style="list-style-type: none"> - when application is done - that weather conditions are reviewed prior to application. <p align="center">...</p>
<p>6-7. Pesticide containers must be emptied properly (Control of Pollution Act 1974: Waste on Land 5.1 - 5.4).</p> <p align="center">...</p>	<p>Observe/interview personnel to verify that the procedures listed below are followed when emptying pesticide containers: (1)(4)(5)</p> <ul style="list-style-type: none"> - Rinse water is used for pesticide application whenever possible - protective clothing is worn while rinsing containers - containers are not rinsed by dipping into a stream, pond, or ditch - all partially used containers are returned to the pesticide storage area when not in use. <p align="center">...</p>
<p>6-8. Empty pesticide containers and equipment used to apply pesticides should be cleaned away from water sources and other pesticides (Control of Pollution Act 1974; Pollution of Inland Waters 4.16).</p> <p align="center">...</p>	<p>Inspect area where pesticide equipment is cleaned. (1)(4)(5)</p> <p>Determine if wash water from cleaning area can reach water sources through drains or sewer systems. Confirm that wash water is not poured down sewer or drain.</p> <p>Verify that pesticide containers are rinsed at least 3 times and (where practical) the water is utilized as part of the pesticide application. (1)(4)(5)</p> <p>Determine whether base has made arrangements with local authorities for disposal of pesticide waste and wash water. (1)(2)(7)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
PESTICIDES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>6-9. Empty pesticide containers should be rinsed and stored in separate areas that are clearly defined and marked and that are secure from unauthorized personnel (Control of Pollution Act 1974: Waste on Land 4.2, Pollution of Inland Waters 4.16).</p> <p align="center">...</p>	<p>Inspect collection area designated for empty containers for the following: (1)(4)(5)</p> <ul style="list-style-type: none"> - proper marking on building - locks or other security devices - empty paper containers placed in weather-proof containers. <p>If no collection area, determine what is done with empty containers. (1)(2) (4)(5)</p> <p align="center">...</p>
<p>6-10. Empty pesticide containers must be disposed of properly (Control of Pollution Act 1974: Waste on Land 7.1 - 7.4).</p> <p align="center">...</p>	<p>Interview pest shop manager to determine how empty containers are disposed.</p> <p>Ensure that if local authorities do not collect pesticide wastes that the following disposal procedures are followed:</p> <ul style="list-style-type: none"> - containers are burned under controlled conditions - metal or glass containers that are not aerosol: <ul style="list-style-type: none"> - - have caps removed - - holes are punched in metal containers (except aerosol cans) - - glass containers are crushed within a sack - containers are buried 16 inches deep in a marked location that is located away from waterways, ponds or ditches - paper and plastic may be burned unless contained chemicals listed in Appendix 2; those that contained chemicals from this list must be buried following the procedures listed above - aerosol cans are disposed of in regular waste; they should not be incinerate. <p align="center">...</p>
<p>6-11. Installation pesticide shops should attempt to order only the amount of pesticide needed (Control of Pollution Act 1974: Waste on Land 4.1).</p> <p align="center">...</p>	<p>Review acquisition process for pesticides with pesticide shop personnel. (1) (2)(8)</p> <p>Determine if an excess of expired or damaged pesticide products is being turned in for disposal. (8)</p> <p align="center">...</p>
<p>6-12. Personnel who apply pesticides should avoid mixing excess amounts of pesticides (Control of Pollution Act 1974: Waste on Land 6.1 - 6.3).</p> <p align="center">...</p>	<p>Review method of mixing with personnel in pesticide shop. (4)(5)</p> <p>Determine if personnel routinely mix excess spray mixture.</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
PESTICIDES MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>6-13. Unused pesticides should remain in the original package (Control of Pollution Act 1974; Pollution of Inland Waters 4.15).</p> <p align="center">...</p>	<p>Inspect storage area to determine if pesticides are kept in original package when not in use. (4)(5)(8)</p> <p align="center">...</p>
<p>6-14. Only herbicides that are approved for use near or in a water course may be used to control aquatic weeds or weeds on banks or dikes. Permission to treat these areas must be obtained from the local water authorities prior to application (Control of Pollution Act 1974; Pollution of Inland Waters 4.12).</p> <p align="center">...</p>	<p>Determine whether herbicides are used at the installation for controlling weeds on banks or dikes, or to control aquatic vegetation. (1)(2)(4)(5)</p> <p>Verify that local water authority was notified and authorization was obtained prior to herbicide application in these areas. (1)(2)</p> <p align="center">...</p>
<p>6-15. Installations that control aquatic weeds or bankside vegetation with herbicides should follow the guidelines listed in M.A.F.F. Booklet 2078 (Control of Pollution Act 1974; Waste on Land, M.A.F.F Booklet 2078).</p> <p align="center">...</p>	<p>Determine if the installation treats for aquatic weeds with herbicides (i.e. golf course ponds, ditches, etc). (1)(2)(4)(5)</p> <p>Interview staff to ensure that proper guidelines are followed.</p> <p align="center">...</p>
<p>6-16. Pesticides that are no longer useable must be disposed of properly (Control of Pollution Act 1974; Waste on Land 9.1 - 9.7).</p> <p align="center">...</p>	<p>Interview pest shop personnel and review records to verify: (4)(5)</p> <ul style="list-style-type: none"> - unopened containers are returned to supplier - local authorities are contacted for advice - installation has contract with local waste disposal service. <p align="center">...</p>
<p>6-17. Disposal of pesticides must be done through an authorized waste disposal contractor (Control of Pollution Act 1974; Pollution of Inland Waters 4.15).</p>	<p>Review procedure for disposal of pesticides. (1)(2)(4)(5)</p> <p>Determine if the installation informs local authorities about pesticide disposal. (1)(2)(4)(5)</p> <p>Verify that disposal of pesticide wastes is handled by an authorized waste disposal contractor. (1)(2)(7)</p>

(1) Base Civil Engineering (BCE) (2) Bioenvironmental engineering (BEE) (3) Base Medical Services - Environmental Health Section (EHO) (4) Pest Management (5) Golf Course Maintenance (6) Base Fire Chief (7) Base Contracting Office (8) Base Supply (LGS)

Appendix VI-1

Substances scheduled under the Poisonous Substances in Agriculture Regulations 1984

Part I	chloropicrin demeton	dimefox mezidox
Part II	aldicarb amiton carboturan carbosulphan cycloheximide dialifos dinoseb (DNBP) and its salts dimoterb and its salts disultoton DNOC (DNC) and its salts endosulfan endothal and its salts endrin fluoroacetamide fonolos	medinoterb and its salts mephosfolan methomyl mevinphos nipefox oxamyl parathion phorate potassium arsenite schraden sodium arsenite sulfotep TEPP (HETP) thiofanox thionazin

Ministry of Agriculture, Fisheries and Food Booklet 2198

Part III	amitraz azinphos-ethyl azinphos-methyl chlorfenvinphos deltamethrin demephion demeton-methyl demeton-S-methyl demeton-S-methyl sulphone dichlorvos dioxathion draxolon ethion fenamino sulf fenezathor	fentin acetate fentin hydroxide formetanate mecarbam methidathion nicotine and its salts omethoate oxydemeton-methyl phenkapton phosphamidon pirimiphos-ethyl quinalphos thiometon triazophos varidothion
Part IV	any organo-mercury compound	

Appendix VI-2

SPECIAL DISPOSAL REQUIREMENTS FOR PESTICIDE PACKAGING

The paper or plastic container of the following pesticides or their formulations should not be burnt, because of the risk of explosion or the risk of phytotoxic vapors affecting neighboring crops and plants. (Reference paragraph 7.3.1 and 7.3.2 of these Guidelines.)

Active Ingredients

benazolin
clopypalid
2, 4-D
2, 4-DB
dicamba
dichlorprop
fenoprop
MCPA
MCPB
mecoprop
oxadiazon
picloram
sodium chlorate
2, 4, 5-T
2, 3, 6-TBA
trichlopyr

Other pesticides, or formulations, marked as highly inflammable; pyrotechnical devices ('smokes') and atomisable fluids.

This list is operative at the date of publication. Information on new formulations should be obtained from the local official agricultural adviser.

INSTALLATION	COMPLIANCE CATEGORY: PESTICIDES MANAGEMENT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

UNITED KINGDOM

Section VII

**Petroleum, Oils, Lubricants
(POL) Management**

SECTION VII

POL MANAGEMENT

A. Applicability

U.S. Air Force installations located in the United Kingdom are likely to have operations involving the use of petroleum, oils, and lubricants (POLs). This section addresses POLs and, though limited in scope, should be used as a guide when evaluating the compliance with United Kingdom regulations regarding POLs.

U.S. air bases in the United Kingdom, have a unique relationship with the British Royal Air Force (RAF) and British laws and regulations. In regard underground storage tanks (USTs), this is especially true. Regulations regarding tank installation or tank testing do exist, but after the initial testing, no further testing takes place unless general servicing indicates that further testing is needed. Pipelines are tested at regular intervals and logged.

There is a regular schedule which the Property Services Agency (PSA) follows for cleaning and inspection. Installations do carry out their own fuel testing, and when contaminants are found in the fuel (e.g., dirt, rust), the PSA is contacted to perform additional cleaning and inspection of the tank.

Any new tanks are installed by the PSA and will therefore meet British, not U.S., standards unless a policy has been developed to incorporate U.S. standards at the base throughout the U.K.

To efficiently evaluate this UST section, acceptance of PSA standards and method is critical. Memorandums of agreement or policy letters may already exist to outline the separate roles of the PSA and the base Civil Engineer (BCE). Finding these (if they exist) is critical when using the U.K. manual.

B. United Kingdom Laws and Regulations

The United Kingdom does not have many regulations that give specific guidance on POLs. The evaluator may want to review the hazardous materials section of this manual as many POL products are regulated as "dangerous substances."

The Motor Fuel (Lead Content of Petrol) Regulations 1976 This establishes a limit of 0.45 grams of lead per liter of petrol (gasoline). This regulation also implements a requirement that all pumps at the gas station be labeled with the composition of the petrol.

C. EEC Regulations

Council Directive No. 75/439/EEC (OJ No. L 194, 25.7.1975 p.23) Establishes resolutions regarding the disposal of waste oil. It requires member states to take regulatory action that will promote recycling of waste oils and prohibit the discharge of waste oils into inland surface waters, ground water, coastal water, and drainage systems; to prohibit the deposit or discharge of waste oils that are harmful to the soil and any uncontrolled discharge or residues resulting from processing waste oil; and to prohibit processing methods of waste oil that produce air pollution exceeding set standards.

D. Key Compliance Definitions

- Gas Oils = any liquid petroleum product produced in a refinery at which: (a) less than 65% by volume, including losses, is distilled at a temperature of 250°C when tested by the method described in the British Standard which is entitled "Method for Determination of Distillation of Petroleum Products," B.S. 4349:1968, 23 September 1968; (b) 85% or more by volume, including losses, is distilled at a temperature of 350°C when it is tested by that method.
- Motor Fuel = fuel of any kind used in motor vehicles.
- Petrol = petroleum spirit of a kind used as fuel in motor vehicles as defined in Section 23 of the Petroleum (Consolidation) Act of 1928.
- Petrol Filling Station = any premises used or intended to be used for trade or purposes of gain for fueling motor vehicles with petrol.
- Power Station = any plant or equipment used directly or indirectly for the generation of electrical energy, or for the purposes of testing, trial, or development in connection with the generation of such energy.
- Waste Oils = any semiliquid or liquid used product totally or partially consisting of mineral or synthetic oil, including the oily residues from tanks, oil-water mixtures, and emulsions.

**POL MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	7-1 through 7-2 and 7-7 through 7-10	(1)(2)(3)(10)
If the installation operates gas pumps	7-3	(3)(8)
If the installation produces waste oil	7-4 through 7-5	(1)(2)(3)(4)(8)(9)
If the installation stores petroleum gases in bulk	7-6	(3)(4)(8)
If the installation is installing new underground storage tanks	7-11 through 7-13	(1)(2)(3)(4)(10)
If the installation has existing underground storage tanks	7-13	(1)(2)(3)(4)(10)

***CONTACT/LOCATION CODE:**

- (1) Base Environmental Coordinator (BEC)
- (2) Base Civil Engineer (BCE)
- (3) Base Fuels Management Office (BFMO)
- (4) Liquid Fuels Maintenance (LFM)
- (5) Base Bioenvironmental Engineer (BEE)
- (6) Base Fire Department
- (7) Heat Shop
- (8) Power Production
- (9) AAFES Gas Station
- (10) Hobby Shop
- (11) Property Services Agency

**COMPLIANCE CATEGORY:
POL MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p align="center">POLS</p>	
<p>7-1. Determine action or changes since previous evaluation of POLs.</p> <p align="center">...</p>	<p>Obtain copies of previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p>
<p>7-2. The installation should maintain a current file of all applicable United Kingdom and local regulations on POL management.</p> <p align="center">...</p>	<p>Examine file of regulations. Determine if the following documents are maintained and kept current: (1)(2)</p> <ul style="list-style-type: none"> - local ordinances - technical orders from the Property Services Agency (PSA) - The Motor Fuel (Lead Content of Petrol) Regulations 1976. <p align="center">...</p>
<p>7-3. Installation gas pumps must be labeled with the specifications of the gasoline (The Motor Fuel [Lead Content of Petrol] Regulations 1976).</p> <p align="center">...</p>	<p>Inspect Army and Air Force Exchange Service (AAFES) gas pumps and motor pool pumps to determine if they are properly labeled according to the British standard "Specification for Petrol for Motor Vehicles." (3)(9)</p> <p align="center">...</p>
<p>7-4. Installations are prohibited from discharging or depositing waste oils into waste waters, drainage systems, or soils (75/439/EEC, Article 4).</p> <p align="center">...</p>	<p>Determine whether the installation generates any waste oils. (1)(2)(3)(4)(9)(10)</p> <p>Verify that waste oils are properly disposed of by permitted facilities.</p> <p align="center">...</p>
<p>7-5. Installations may be required to store waste oils separately (75/439/EEC, Article 8).</p> <p align="center">...</p>	<p>Determine whether local authorities have determined type of impurities, level of percentage in waste oil, and storage requirements for waste oils, and verify that these requirements are being met (if applicable). (1)(2)</p> <p align="center">...</p>
<p>7-6. Liquefied petroleum gas in tanks, vessels, and cylinders must be marked and stored properly (Factories, the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 [7]).</p>	<p>Inspect storage areas of liquefied petroleum gas and ensure that they are stored in one of the following manners: (3)(4)(9)</p> <ul style="list-style-type: none"> - in underground reservoir or fixed tanks - in movable storage tanks in secure areas - within pipelines, pumps, or other portion of an enclosed pipeline system - in cylinders either in open air or a fire-resistant storeroom. <p>Ensure that all items are clearly marked "Highly Flammable L.P.G."</p>

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**COMPLIANCE CATEGORY:
POL MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p align="center">USTs</p> <p>7-7. Determine action or changes since previous review of UST management.</p> <p align="center">...</p> <p>7-8. The installation should maintain a current file of applicable United Kingdom and local regulations on UST management.</p> <p align="center">...</p> <p>7-9. Installations in the United Kingdom test fuel from USTs for contamination; if contamination is found, the PSA must be contacted to arrange for cleaning and inspection of the tank (GMP).</p> <p align="center">...</p> <p>7-10. Installations with underground tanks are subject to periodic testing by the PSA (MOD standard).</p> <p align="center">...</p> <p>7-11. Bases that install new USTs must have the work done through the PSA office (MOD standard).</p> <p align="center">...</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p> <p>Examine file of regulations: (1)(2)</p> <ul style="list-style-type: none"> - the Town and Country Planning Act of 1971 (Scotland 1972) - local regulations - any memorandums of agreement or policy letters regarding the delegation of duties between the Property Services Agency (PSA) and Base Civil Engineering (BCE). <p>(NOTE: The Property Services Agency (PSA) will be a source of information regarding specific cleaning requirements, testing requirements, and installation of new tanks.)</p> <p align="center">...</p> <p>Determine if the fuel from storage tanks is tested using a specific schedule; evaluator may need to refer to Worldwide Manual.) (1)(2)(3)</p> <p>Review records to confirm that tests are performed on schedule.</p> <p>Determine from records if contamination was found and if the PSA was contacted for cleaning and inspection.</p> <p align="center">...</p> <p>Discuss with Environmental Coordinator and PSA arrangements for tank testing and standards that are used. (1)(11)</p> <p>Determine if USTs are tested using the more stringent standard.</p> <p>(NOTE: If less stringent standards are being used, determine if arrangements are being made to upgrade these to more stringent requirements.)</p> <p align="center">...</p> <p>Determine if the base has plans to install new storage tanks and if the PSA office has been overseeing the process. (1)(2)(11)</p> <p>Discuss with Environmental Coordinator, Fuels Management, and PSA the requirements used for the installation of tanks. Determine which standards are followed and if they are the more stringent standard. (1)(2)(3)(11)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
POL MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>7-12. Undergound tanks should be constructed of proper materials (Guidance Note CS 2 from the Health and Safety Executive, "The Storage of Highly Flammable Liquids," 20-23, 28-39).</p> <p>(NOTE: The Property Services Agency (PSA) is responsible for a majority of underground storage tank installation and maintenance; it is important that this agency is contacted concerning what aspects of USTs are within the scope of responsibility of the U.S. Air Force-Europe.)</p> <p align="center">...</p>	<p>Determine if tanks, fittings, and valves are constructed with the following standards: (1)(2)(3)(4)(11)</p> <ul style="list-style-type: none"> - constructed of steel or other material compatible with the chemical being stored - corrosion protected (particulars should be discussed with the advice of a specialist) - leak tested before put into use.(including pipelines) - as a flange or coupling to connect with the delivery tanker - connections to the tank are properly located so any spills from filling can be contained and kept away from sources of ignition - the discharge end of the filling line is placed in a manner that allows it to reach the lowest level of fluid to minimize static electricity - the tank has an atmospheric or pressure vacuum vent - tanks that contain liquids with a flash point below 20°C have a flame arrester on the vent outlet - every tank must have a gauge (an automatic is preferred to dipping); where dipping is the only method a dipping tube should be used and there should be a wear pad at the bottom of the tank. <p align="center">...</p>
<p>7-13. Undergound Storage Tanks should be properly designed and maintained (Guidance Note CS 2 from the Health and Safety Executive, "The Storage of Highly Flammable Liquids" 13-19).</p> <p align="center">...</p>	<p>Inspect underground storage tank sites and records (especially sites under construction) and determine if the following standards are met: (1)(2)(3)(4)(11)</p> <ul style="list-style-type: none"> - tanks should be away from building foundations and never located underneath the building - the excavation hole for the placement of the UST should be of sufficient size to allow 1 meter from the tank to the side of the hole - tanks should have a manhole in the form of an extended tube was the manhole cover at ground level - all tank fittings and connections should be within a manhole - all filling and dipping connections should be exposed to the open air - all tanks should be secured so they will not float in case of a flood - tanks in areas subject to vehicle traffic or other loading should be located in a manner that protects them, such as being fenced off, or by placing the tanks in a concrete vault with a reinforced concrete slab (or other adequate cover) - tanks should have structural support such as concrete or masonry - the pit surrounding the tank should be filled with inert material (sand or gravel). <p align="center">...</p>

(1) Base Environmental Coordinator (BEC) (2) Base Civil Engineer (BCE) (3) Base Fuels Management Office (BFMO) (4) Liquid Fuels Maintenance (LFM) (5) Base Bioenvironmental Engineer (BEE) (6) Base Fire Department (7) Heat Shop (8) Power Production (9) AAFES Gas Station (10) Hobby Shop (11) Property Services Agency

INSTALLATION:	COMPLIANCE CATEGORY: POL MANAGEMENT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

UNITED KINGDOM

Section VIII

Solid Waste Mangement

Section VIII

SOLID WASTE MANAGEMENT

A. Applicability of this Section

Air Force installations located in the United Kingdom generate solid waste, or "controlled waste," as it is called in the U.K. Strict licensing procedures have been set up for those that operate a treatment or disposal facility for controlled wastes.

B. United Kingdom Laws and Regulations

The United Kingdom regulates the disposal of controlled waste through the Waste Disposal Authority and local authority. Most of the regulations are addressed to the authorities rather than to the individual.

The Town and Country Planning Act of 1971 (Scotland 1972) Controls the use of all land. To develop a parcel of land in any manner, authorization must be received. This would include the development of a landfill or treatment facility.

The Control of Pollution Act (CoPA) Part 1 Regulates Waste on Land. This act covers the initiation of waste disposal plans by the local waste authority, the collection and disposal of controlled waste, other wastes, reclamation of wastes, and street cleaning and litter. The portions of the act applicable to USAF (U.K.) include the prohibition waste disposal without a license and general licensing requirements. (NOTE: this regulation will be taken over by the Environmental Protection Bill (EPB). The EPB is expected to strengthen solid waste regulations and provide more guidance by making some of the current waste management papers mandatory instead of advisory.)

The Public Health Acts and the Civil Government Act (Scotland) 1982 Regulate the collection and disposal of clinical wastes.

C. EEC Regulations

Council Directives of 15 July 1975 (75/442/EEC) Encourages recycling and reuse of waste and requires any operation that treats, stores, or tips waste for a third party to obtain a permit.

D. Key Compliance Definitions

These definitions were obtained from Control of Pollution Act and various waste management papers.

- **Absorptive Capacity** = the maximum amount of liquid taken up and retained (by unit weight of solid) under specified conditions; usually the amount of liquid retained by unit weight of refuse in a landfill before leachate is produced.
- **Associated Works** = in relation to pipes, any of the following connected with pipes: any valve, filter, stopcock, pump, inspection chamber, or manhole, and any other works that are prescribed.
- **Attenuate and Disperse** = refers to landfills that allow the migration of leachate, and where conversion of the polluting species within the leachate takes place mainly in the strata beneath or around the site.
- **Baling** = to compress solid wastes, using a baling machine, into a block of suitable density and form to allow it to be handled as a unit.
- **Biodegradation** = the breakdown of material by the action of micro-organisms.
- **Capping** = the covering of a landfill with impervious material to inhibit penetration by liquids.
- **Clinical Waste** = human and animal tissue or excretions, drugs and medicinal products, swabs and dressings, and instruments, or similar substances and materials.
- **Co-disposal** = the disposal of limited amounts of certain difficult wastes (solid and liquid) with household and similar wastes in such a way that benefit is intentionally derived from processes operating within the landfill to produce an environmentally benign deposit.
- **Commercial Waste** = waste from offices or showrooms, passenger facilities at transport stations, members' clubs, etc.
- **Compacting** = Increasing the density of solid waste by either the repeated passage over it by heavy machinery or by the use of baling machines or static compactors.
- **Compost** = Organic matter decomposed aerobically and used as a soil conditioner.
- **Controlled Waste** = household, industrial, and commercial solid waste.
- **Containment Site** = landfill site where the rate of release of leachate into the environment is extremely low. Polluting components in wastes are retained

within such landfills to allow biodegradation and attenuating processes to have occurred.

- **Cover** = material used to cover solid wastes deposited in landfills. Intermediate cover is used to cover each lift (layer) at the end of each working day to prevent odors, windblown litter, insect or rodent infestation, and water ingress. Final cover is the layer or layers of materials placed on the surface of the landfill prior to its restoration.
- **Environmental Hazard** = if the waste has been deposited or disposed of in a manner or a quantity (whether that quantity by itself or cumulatively with other deposits of the same or different substances) that subjects persons or animals to material risk of death, injury, or impairment of health, or that threatens to pollute or contaminate (whether in the surface or underground) any water supply; and where waste is deposited or disposed of in any receptacle, whether sealed or not, this shall not be taken to exclude any risk that might be expected to arise if the waste were not so deposited or disposed of.
- **Household Wastes** = wastes generated from a private dwelling or residential home, or from a premises forming part of a university or school or other educational establishment, or forming part of a hospital or nursing home, domestic garages and stores, residential hostels, prisons, halls, and similar premises used for public meetings. The following items are not considered household waste: mineral or synthetic oils, asbestos, clinical, and waste.
- **Household Waste Amenity Site** = facility provided by the local authority to which householders can take generally bulky household items or garden wastes for subsequent disposal elsewhere, or recovery at the site.
- **Incineration** = the burning of wastes in a purpose designed facility to achieve their destruction or a significant reduction in their volume.
- **Industrial Wastes** = (a) waste produced in the course of constructing, improving, repairing, or demolishing any building structure; (b) waste produced as a result of dredging operations; and (c) sewage deposited on land sewage deposited, whether inside or outside the curtilage of a sewage treatment works, as an integral part of the operation of those works; and sewage spread on land for agricultural purposes; (d) waste removed from land on which it has been deposited; (e) poisonous or noxious wastes from certain trades (e.g. petrol stations, photo developing); (f) wastes imported into the U.K. for treatment, disposal, or re-export. Exceptions to the definition of industrial wastes: wastes from construction, demolition, etc. that is placed on a site prior to the same with permission; waste ash; building demolition waste deposited on the same site; waste from dredging operations for the purpose of land drainage or the

maintenance of a watercourse deposited along the water course; waste produced from the maintenance of any park, sports field, garden, or any other recreation ground deposited and disposed of within the boundaries of the grounds where it was produced; waste deposited for the sole purpose of research into the effect of waste on the natural environment, or the performance of plant equipment; waste deposited on land (by the owner or with the owner's consent) for a period of time not exceeding one month (does not apply to transfer facilities); waste placed in waste receptacles; waste disposed of on the same site where it was produced by use of a static plant that has a disposal capacity of no more than 200 kilograms; waste disposed of as an integral part of the industry process that produces it.

NOTE: The above exceptions shall not apply to the deposit or disposal on land, or in a receptacle, of any substance (whether solid, semisolid or liquid) which is poisonous, noxious, or polluting and the presence of which on the land or in the receptacle is liable to give rise to an environmental hazard.

- **Inert Wastes** = wastes that will not physically or chemically react or undergo biodegradation within the landfill environment.
- **Infrastructure** = The buildings, roads, static plant, and engineering works that form the framework of a waste facility.
- **In-House Facility** = Facilities for the treatment and/or disposal of waste situated normally within the curtilage of the plant where the waste was generated. These facilities are not available generally on a commercial basis.
- **Landfill** = The deposit of waste onto and into land in such a way that pollution or harm to the environment is prevented and, through restoration, provides land that may be used for another purpose.
- **Landfill Gas** = A by-product from the digestion by anaerobic bacteria of putrescible matter present in waste deposited at landfill sites. The gas is predominantly methane (65%) and carbon dioxide (35%), with traces of various other vapors and gases.
- **Leachate** = liquid that seeps through a landfill and extracts substances from the deposited waste.
- **Licensing** = the granting of formal permissions, under Sections 3 and 5 of the Control of Pollution Act 1974, for waste treatment, storage, and disposal operations at a specified site.

- **Monitoring** = a continuous or regular periodic check to determine the environmental impact of waste facilities to ensure compliance with site license conditions.
- **Mono-disposal** = a landfill operation where only one type of waste is deposited.
- **Multi-disposal** = a landfill operation where a number of types of wastes are deposited together, but without the deliberate aim of promoting a reaction among them.
- **Pollution** = the addition of materials or energy to an existing environmental system to the extent that undesirable changes are produced directly or indirectly in the system.
- **Private Dwelling** = a premise used wholly for the purposes of a private dwelling or private dwellings as determined in accordance with Schedule 13 of the General Rate Act 1967. - a caravan as defined in Section 29 (I) of the Caravan Sites and Control of Development Act 1960.
- **Public Liability Insurance** = insurance to indemnify members of the public affected by the operation of the waste facility.
- **Pyrolysis** = the decomposition of a substance by heat in the absence of oxygen.
- **Recovery** = the removal of recyclable materials from the waste stream.
- **Refuse** = includes any matter whatsoever whether inorganic or organic.
- **Relevant Land** = in relation to a proposal to issue a disposal license, the land on which activities may be carried on in pursuance of the license, if it is issued in accordance with the proposal; in relation to a disposal license, the land on which activities may be carried on in pursuance of the license.
- **Resolution** = permission issued by the Waste Disposal Authority to itself to allow it to operate its own waste facilities.
- **Scrap yard** = premises registered under the Scrap Metal Dealers Act 1964.
- **Segregation** = the physical separation of different consignments (or parts of a consignment) of waste.
- **Sludge** = liquid waste containing a high proportion of solids.

- **Solvent** = an organic liquid used to dissolve other substances.
- **Sorting** = the physical division of solid waste into a number of constituent parts.
- **Special Waste** = waste defined as 'special' by the Control of Pollution (Special Waste) Regulations 1980.
- **Spillage** = an accidental release of liquid or solid from a container, tank, or vehicle.
- **Storing** = depositing waste for a finite period with the intention treating and/or disposing of it elsewhere.
- **Transfer Station** = premises used for the temporary storage of waste produced by others pending movement elsewhere.
- **Waste** = any substance that constitutes a scrap material, an effluent, or other unwanted surplus substance arising from the application of any process; any substance or article that requires disposal because it is broken, worn out, contaminated or otherwise spoiled, but not including substances that are an explosive within the meaning of the Explosives Act 1875.
- **Waste Disposal Regulation** = in Greater London, the London Waste Regulation Authority; in the metropolitan county of Greater Manchester, the Greater Manchester Waste Disposal Authority; in the metropolitan county of Merseyside, the Greater Merseyside Waste Disposal Authority; in all other local authority areas in England, the council or the county or metropolitan district; in Wales, the council of the district.
- **Waste Oil** = mineral or synthetic oil contaminated, spoiled, or otherwise unfit for its original purpose.
- **Water Balance Equation** = the determination of the theoretical free leachate production in a landfill by subtracting the total liquid (including storage) from the total liquid input.
- **Working Plan** = document submitted in support of disposal license and planning applications detailing the engineering and restoration proposals and the conduct of operations. It should include a technical drawing or drawings for each stage of the development, and a detailed statement of the way the operations are to be carried out.

**SOLID WASTE MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	8-1 through 8-8	(1)(2)(3)
If the installation produces controlled waste	8-9 through 8-11	(1)(2)(3)
If the installation operates a waste disposal or treatment facility	8-12	(1)(2)
If the installation has waste disposal permits	8-13	(1)(3)
If the installation operates an landfill	8-14 through 8-18	(1)(3)(4)

***CONTACT/LOCATION CODE:**

- (1) Base Environmental Coordinator
- (2) Base Civil Engineer (BCE)
- (3) Base Bioenvironmental Engineer (BEE)
- (4) Landfill Operations
- (5) Incinerator Staff

**SOLID WASTE MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS
(continued)**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
If the installation operates an incinerator	8-19 through 8-24	(1)(2)(3)(5)
If the installation operates a solid waste treatment facility	8-25	(1)
If the installation operates a transfer station	8-26	(1)
If the installation operates a household amenity site	8-27	(1)
If the installation operates a scrapyard	8-28	(1)
If the installation produces clinical waste	8-29 through 8-33	(1)(3)(5)

***CONTACT/LOCATION CODE:**

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**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-1. Determine action or changes since previous review of the Solid Waste management.</p> <p align="center">...</p>	<p>Obtain a copy of the previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p>
<p>8-2. The installation should maintain a current file of United Kingdom and local regulations on solid waste management.</p> <p align="center">...</p>	<p>Determine if the following documents are maintained and kept current at the installation: (1)(2)</p> <ul style="list-style-type: none"> - the Control of Pollution Act (1974) - the Town and Country Planning Act - the Collection and Disposal of Waste Regulations 1988 - applicable Status of Forces Agreements - applicable memorandums of agreement or policy letters - applicable local laws and ordinances - applicable Codes of Practice for Solid Waste (controlled waste) - 75/442/EEC, Council Directive of 15 July 1975, on waste. <p align="center">...</p>
<p>8-3. Local disposal authorities develop disposal plans for their area and may need information regarding the installations waste disposal (CoPA, Section 2).</p> <p align="center">...</p>	<p>Determine if the installation has received requests for information regarding waste disposal activities and if the installation has assisted the local authority in this manner. (1)(2)</p> <p align="center">...</p>
<p>8-4. Installations may temporarily deposit waste pending its disposal elsewhere without a disposal license if certain conditions are met (the Collection and Disposal of Waste Regulations 1988, Regulation 9, para. 15 and 17).</p> <p align="center">...</p>	<p>Determine if the following "nondisposal license" requirements are met for: (1)(2)(3)</p> <ul style="list-style-type: none"> - liquid waste with a total volume not to exceed 23,000 liters in secure container - nonliquid waste with a total volume not to exceed 80 cubic meters in a secure container - nonliquid waste with a total volume not to exceed 50 cubic meters in a secure place. <p>Determine if the installation deposits outside the premises nonliquid waste with a total volume less than 50 cubic meters in a container for 28 days or less.</p> <p align="center">...</p>
<p>8-5. Installation waste disposal may be arranged through the collection authority (CoPA, Section 12).</p> <p align="center">...</p>	<p>Determine if installation refuse is disposed of through the collection authority. (1)</p> <p>If so, determine if requirements set out by the local collection authorities are being met.</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-6. Installations that have waste collected under the jurisdiction of the collection authority may be required to use specific types of receptacles (CoPA, Section 13).</p> <p align="center">...</p>	<p>Determine if this is a requirement for the installation. (1)</p> <p>If so, determine whether the proper receptacles are used.</p> <p align="center">...</p>
<p>8-7. Installations may have other arrangements for the collection and disposal of controlled wastes (CoPA).</p> <p align="center">...</p>	<p>Determine whether the installation uses an alternate method for waste disposal, such as a private contractor. (1)</p> <p>If so, determine whether the waste is being sent to a licensed facility and that the method has been approved by the proper authorities.</p> <p align="center">...</p>
<p>8-8. Installations may be required to follow safety precautions with regard to waste disposal operations (CoPA, Section 13).</p> <p align="center">...</p>	<p>Determine if the installation has any safety requirements for those involved with waste collection and disposal. (1)(3)</p> <p>Review Appendix 8-1, "Checklist for Safe Management of Waste Disposal Facility," with the environmental coordinator or supervisor in charge of waste collection and disposal for possible safety requirements.</p> <p align="center">...</p>
<p>8-9. Installations may dispose of certain controlled (household) wastes without a disposal license (Control of Pollution Act 1974, Section 4(2)).</p> <p align="center">...</p>	<p>Determine that installations without a license dispose only of the following controlled household wastes: (1)(2)</p> <ul style="list-style-type: none"> - from rooms let singly for residential purposes - from premises occupied by a religious community and used wholly for human habitation - from places of religious worship - from charitable organizations - from campsites - from residential hotels - from prisons or other penal institutions - from a hall or other premises used mainly for public meetings. <p align="center">...</p>

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COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT United Kingdom	
REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>8-10. Installations may be required to obtain a disposal license if they dispose of certain controlled (industrial) wastes (the Collection and Disposal of Waste Regulation 1988, Regulation 6).</p> <p style="text-align: center;">...</p> <p>8-11. Installations which operate a waste disposal or treatment facility for controlled wastes may be required to have a license for solid waste (CoPA, Section 3, 5, 6).</p> <p style="text-align: center;">...</p>	<p>Determine whether the installation disposes of any of the following controlled industrial wastes: (1)(2)(3)</p> <ul style="list-style-type: none"> - waste from premises used for maintaining vehicles, vessels, or aircraft - waste arising from construction or demolition - sewage or sewage sludge deposited on the land - clinical waste from other than private dwellings - waste that previously formed part of any aircraft, vehicle or vessel - waste removed from land on which it has previously been deposited (and any soil it has been in contact with) - leachate from waste deposit - poisonous or noxious wastes resulting from: <ul style="list-style-type: none"> - -mixing or selling paints - -laundering or dry cleaning - -developing photographic film or making prints - -selling petrol, kerosene, or similar substances - -waste oil or waste solvent. <p style="text-align: center;">...</p> <p>Determine if the installation is required to have a license for solid waste. (1)(2)</p> <p>If there is a license, examine it for requirements and determine if the installation is complying with the requirements. Specifics can include:</p> <ul style="list-style-type: none"> - the length of license period - requirements of supervision by the license holder - the types and amounts of waste to be handled, and their treatment method - recordkeeping requirements - precautions that must be taken in regard to the land - special additional requirements of the Town and Country Planning Act - hours of operation - any preparations required for the site before operations at the facility can begin. <p>Determine if the license has been reviewed within the past five years.</p> <p style="text-align: center;">...</p>

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**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-12. Installations that transport controlled wastes may need to be registered as carriers of controlled wastes (Control of Pollution [Amendment] Part 1, para. 1[1]).</p> <p>(NOTE: The transport of controlled wastes between facilities on the installation is exempt from this requirement.)</p> <p align="center">...</p>	<p>Determine whether the installation transports any controlled waste off-site. (1)</p> <p>Examine certificate of registration to verify that installation has registered with waste disposal regulation authority as a carrier of controlled wastes and that registration has not expired.</p> <p>(NOTE: The disposal of sludge from domestic sewage is usually under a contract through the Property Services Agency [PSA] office.)</p> <p align="center">...</p>
<p>8-13. Installations that operate landfills may be required to follow guidelines set by the Institute of Waste Management for landfill operations (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Examine landfill permit and ensure that the landfill is being operated according to the guidelines. (1)</p> <p align="center">...</p>
<p>8-14. Landfill operations should be inspected at regular intervals (GMP, Institute of Waste Management Publication No. 11).</p> <p align="center">...</p>	<p>Determine if the following are reviewed: ((1)(3)</p> <ul style="list-style-type: none"> - gates and fences - roads and access - notices and signs - general tidyness - cover <ul style="list-style-type: none"> - -availability - -proper usage - condition of cabin <ul style="list-style-type: none"> - -garage - -stores - -toilet - health and safety - mobile plant <ul style="list-style-type: none"> - -clean and grease - -tow chains - -fire extinguisher - -first aid kits - tip records - leachate control <ul style="list-style-type: none"> - -ditches - -pumps. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-15. Adequate training should be given to those who operate landfill machinery (GMP; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p> <p>8-16. Installations that operate co-disposal landfills (the disposal of industrial waste with domestic waste) must follow appropriate separation techniques (GMP; Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Interview landfill staff to determine if they are knowledgeable about the operation of equipment and safety precautions. (4)</p> <p>Determine if any training records are kept at the site; if so, examine them to determine if training has been kept current.</p> <p>Training should be done for emergency situations such as fire and explosion. (1)</p> <p align="center">...</p> <p>Determine if the landfill operators segregate reactive from nonreactive materials, including the use of separate disposal areas. (4)</p> <p align="center">...</p>

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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-17. Safety precautions must be taken at co-disposal sites to prevent injury (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine whether the landfill has the following available for its workers: (3)(4)</p> <ul style="list-style-type: none"> - protective clothing - facility for decontamination - working eye-wash bottles - communications (e.g., twoway radio) - procedure manual for emergency response. <p align="center">...</p>
<p>8-18. Installations that operate incinerators may be required to have a license to operate (CoPA; Waste Management Paper No.4).</p> <p align="center">...</p>	<p>Determine whether the installation incinerator has a license and examine it for the following compliance criteria: (1)(2)(3)</p> <ul style="list-style-type: none"> - permitted waste types and amounts - storage and spill prevention requirements - staffing requirements, including number of persons, qualifications, and training. <p align="center">...</p>
<p>8-19. Installations that operate incinerators must follow certain procedures (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine whether the following criteria are met before incineration takes place: (1)(2)(3)(5)</p> <ul style="list-style-type: none"> - Adequate information is available regarding the results of combustion of the waste. - Proper handling and storage system is in place for waste arriving at the site. - Procedures are established for compatibility testing of wastes before incinerating. - Correct grate and boiler conditions have been established for the wastes the plant will receive. <p align="center">...</p>
<p>8-20. Installations that operate incinerators must maintain records of wastes stored at the plant (CoPA).</p> <p align="center">...</p>	<p>Review records of wastes kept at the plant. (1)(5)</p> <p>Compare records with substances waiting to be incinerated.</p> <p>Note any discrepancies, such as the presence of wastes not permitted to be incinerated. (5)</p> <p>Examine wastes for proper labeling, including a unique number assigned to each drum and container.</p> <p align="center">...</p>

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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-21. Installations that use incinerators must have proper safety features (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine whether the following criteria are met for the combustion chamber: (5)</p> <ul style="list-style-type: none"> - there is a high and low temperature alarm system for the combustion chamber - low-flow alarm and auto-shutdown of waste input - purge cycle on flame-out sensor linked to purge cycle. <p>Determine whether the following criteria are met for the gas cleaning equipment: (5)</p> <ul style="list-style-type: none"> - there is a high temperature alarm for the scrubbing tower exit gas plus an automatic shutdown of waste input. - a low water flow alarm for the scrubbing tower - a pH control alarm for the scrubbing liquor - indicators or alarms where required for pressure drops across packed sections within the gas-cleaning equipment. <p>Determine if the instrumentation includes a chart recording for combustion temperature and tail gas composition. (5)</p> <p align="center">...</p>
<p>8-22. Installations with incinerators should routinely monitor the plant, including flue gases (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine if the installation monitors the plant in agreement with the authorities. (1)(2)(5)</p> <p>(NOTE: Continuous monitoring is required for O₂, CO, SO₂, particulates, HCl, HF, metals.)</p> <p align="center">...</p>
<p>8-23. Operators of incinerators should be properly trained (GMP, Institute of Waste Management Publication No. 5).</p> <p align="center">...</p>	<p>Determine if the operators are trained in the following areas: (1)(5)</p> <ul style="list-style-type: none"> - housekeeping practices - flammable material storage. <p>Determine if the operators understand the following procedures: (5)</p> <ul style="list-style-type: none"> - checking composition of incoming wastes - appropriate preparation of materials before incineration - storage procedures - incineration procedures (including startup, steady state, normal shutdown, emergency shutdown) - operation of gas cleaning equipment - operation of subsidiary plant such as boiler, compressors and emergency power supplies - maintenance operations, especially shut down procedures and cleaning and repair of the combustion chamber - instructions for permit to work procedures (especially with regard to electrical isolation) - emergency equipment and procedures in the event of a fire or other dangerous occurrence. <p align="center">...</p>

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COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT United Kingdom	
REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-24. Installations that operate solid waste treatment plants may be required to have a license (CoPA; Waste Management Paper No.4)</p> <p style="text-align: center;">...</p> <p>8-25. Installations that operate transfer stations may be required to have a license (CoPA; Waste Management Paper No.4).</p> <p style="text-align: center;">...</p> <p>8-26. Installations that operate household waste amenity sites may require a license (CoPA; Waste Management Paper No.4).</p> <p style="text-align: center;">...</p> <p>8-27. Installations that operate scrap yards may be required to have a license (CoPA; Waste Management Paper No.4).</p> <p style="text-align: center;">...</p> <p>8-28. Installations that generate clinical wastes should follow the requirements of Waste Management Paper No.25 "Code of Practice for Clinical Wastes".</p> <p style="text-align: center;">...</p>	<p>Determine if the installation treatment plant has a license, and examine it for the following compliance criteria: (1)</p> <ul style="list-style-type: none"> - waste types to be accepted - minimum level of training for staff at the operating facility - method in which waste is delivered to the plant - method in which waste is to be recorded and stored before treatment - required action if facility reaches capacity - infrastructure requirements, including fences, hardstand areas, and drainage. <p style="text-align: center;">...</p> <p>Determine if the installation transfer station has a license, and examine it for the following compliance criteria: (1)</p> <ul style="list-style-type: none"> - amount of waste permitted - types of waste permitted - record-keeping requirements - storage capacity and input limits - waste segregation requirements. <p style="text-align: center;">...</p> <p>Determine if the installation has a license and examine it for the following compliance criteria: (1)</p> <ul style="list-style-type: none"> - hours of operation - infrastructure requirements - sanitation requirements - personnel requirements. <p style="text-align: center;">...</p> <p>Determine if the installation scrap yard has a license and examine it for the following compliance criteria: (1)</p> <ul style="list-style-type: none"> - amount and type of waste permitted - permitted treatment processes - required infrastructure or equipment - requirements to prevent public and environmental hazards. <p style="text-align: center;">...</p> <p>Determine if the following procedures are being performed with clinical wastes generated at the installation: (1)(3)</p> <ul style="list-style-type: none"> - the installation has a clinical waste disposal policy that follows the guidelines of the Health and Safety Commission (HSC) document, "The Safe Disposal of Clinical Waste" (HSC 1982) - segregation of clinical wastes from other wastes - clinical waste is not being disposed of in black bags - containers used to transport clinical waste off-base are sturdy enough to withstand handling and spilling. <p style="text-align: center;">...</p>

(1) Base Environmental Coordinator (2) Base Civil Engineer (BCE) (3) Base Bioenvironmental Engineer (BEE) (4) Landfill Operations (5) Incinerator Staff

**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>8-29. Installations that incinerate clinical waste must use appropriate incineration techniques (Waste Management Paper No.25)</p> <p align="center">...</p>	<p>Determine if the following incineration criteria are met: (1)(3)(5)</p> <ul style="list-style-type: none"> - use of properly designed and maintained equipment - personnel properly trained - a safe storage area for wastes awaiting incineration is: <ul style="list-style-type: none"> - well ventilated - accessible - sanitary - secure. - capable of reaching at least 900°C - has dust collection devices - flue-gas cleaning equipmet if more then 750 kg/hr are burned - fail-safe controls are installed - access to remove incineration residues. <p align="center">...</p>
<p>8-30. Installations may landfill certain types of clinical waste (Waste Management Paper No.25).</p> <p align="center">...</p>	<p>Ensure that if the base is disposing of clinical waste in a landfill that only the following items are disposed of: (1)(3)</p> <ul style="list-style-type: none"> - soiled surgical dressings, swabs, and other contaminated wastes - discarded syringes, needles, cartridges, and other sharp instruments are properly packaged - some pharmaceutical and chemical wastes, provided that they are compatible with the landfill environment - animal carcasses that have not been used in research for infectious materials - used but emptied disposable bed-pan liners, urine containers, stomach bags, and used incontinence pads (unless any of these are from a high risk area). <p align="center">...</p>
<p>8-31. Installations that dispose of clinical wastes in landfill must only use landfills licensed to accept such wastes (Waste Management Paper No.25).</p> <p align="center">...</p>	<p>Determine if the landfill that receives the wastes is licensed. (1)</p> <p align="center">...</p>
<p>8-32. Installations that generate clinical waste should not send the waste through a disposal route that includes a transfer station (Waste Management Paper No.25).</p>	<p>Ensure that clinical waste is not directed to a transfer station. (1)(3)</p>

(1) Base Environmental Coordinator (2) Base Civil Engineer (BCE) (3) Base Bioenvironmental Engineer (BEE) (4) Landfill Operations (5) Incinerator Staff

Appendix VIII-1

Checklist for Safe Management of Waste Disposal Facility

Checklist for Safe Management of Waste Disposal Facility

1. Working Plan

The existence of a working plan with full details of safety precautions produced by a competent authority, such as a consultant or in-house specialist.

2. Availability of Instructional Manual

Manual available to all workers written in language that is easily understood.

3. Training of Work Force

Appropriate training provided for all workers. No new recruits allowed to commence work without suitable induction.

4. Efficacy of Supervision

Constant surveillance by sufficient numbers of properly qualified supervisors.

5. Employment of Safety Officer (and Site Chemist if necessary)

The services of a qualified occupational safety and hygiene professional, available on a regular basis and a qualified chemist retained on site to oversee the disposal process check the composition of waste arriving for disposal.

6. Compositional Check on Offered Waste

Nature of all waste rigorously explored before a contract to dispose is agreed. Decisions on its acceptability by a competent authority.

7. Veracity Check on Deposited Waste

The position of all suspect loads checked on arrival at disposal site and detained for further verification if necessary.

8. Protective Clothing and Equipment

A complete range of protective clothing and equipment is available, which includes respiratory apparatus if appropriate.

9. Monitoring

Periodic samples taken of the atmosphere on site to check for hazards such as toxic or flammable substance.

Appendix VIII-1 (Continued)

10. Remote Communication Methods

The presence of appropriate means of communication such as telephone or radio to facilitate relaying instructions and warnings.

11. Site Security

Full security both in and outside working hours to prevent unauthorized access to disposal sites.

12. Ablution

Adequate washing facilities with hot and cold water supply and means of hand drying.

13. Water Supply

Adequate piped supply of clean and wholesome water for drinking purposes.

Source: Institute of Waste Management Publication No. 11: Appendix I

Appendix VIII-2

Controlled Wastes Exempt from Licensing*

- a. Building demolition waste deposited or disposed of on a demolition site, site being or about to be used for construction, improvement, or repair of a building with the occupier's consent.
- b. Spent railway ballast deposited on operational land belonging to the British Railways Board.
- c. Dredging waste deposited on the banks of the watercourse.
- d. Waste from maintaining any park, sports field, public garden or recreation ground which with the occupier's consent is deposited or disposed of within the grounds where it originated.
- e. Waste deposited as part of research into its effect on the environment or research into plant designed to deal with the waste.
- f. Waste deposited directly on land in certain circumstances and with the occupier's consent for a period of not more than 1 month.
- g. Waste deposited in a designated receptacle, the contents of which are subsequently to be disposed of elsewhere.
- h. Waste disposed of on the site on which it is produced by a static plant, including incinerators with a disposal capacity of not more than 200 kilograms per hour.
- i. Waste disposed of as an integral part of the industrial process that produces it. Apart from item i, none of the above cases is exempted if the waste is poisonous, noxious or polluting and may give rise to an environmental hazard if deposited on the land.

* These exemptions applied at the date of publication of this report but may be changed under the proposals for amendment of the Control of Pollution Act (Licensing of Waste Disposal) Regulations 1976 and 1977 (see paragraph 2.2).

INSTALLATION	COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

UNITED KINGDOM

Section IX

Special Programs Mangement

Section IX

Special Programs

A. Applicability

U.S. Air Force Installations located in the United Kingdom (U.K.) are likely to have operations with polychlorinated biphenyl (PCB) or asbestos management issues. This section addresses special issues such as PCB disposal, asbestos disposal, and radon monitoring/abatement, and general handling of these items.

B. United Kingdom Regulations

The U.K. regulates the use and disposal of PCBs as well as the use and disposal of asbestos and its related products. No information on the regulation of radon gas has been found for the U.K., but there may be management papers that address it.

The Asbestos Regulations; Licensing, Prohibition

These regulations implement European Economic Community (EEC) directives regarding asbestos:

Regulation 2 requires those working with asbestos to have a license. It also requires employers to supply medical exams to those working with asbestos every two years.

Regulation 3 prohibits the importing of asbestos minerals crocidolite and amosite into the United Kingdom.

Regulation 4 prohibits the supply of these minerals or products containing these minerals for use at the workplace.

Regulation 5 prohibits the use of crocidolite and amosite in manufacturing or repairing.

Regulation 6 prohibits the spraying of asbestos products.

Regulation 7 prohibits the installation of thermal or acoustical insulation that contains asbestos.

Waste Management Paper No.18 Provides information regarding the code of practice for asbestos management.

Waste Management Paper No.6 Provides code of practice regarding PCBs.

No regulations have been found for radon gas. A survey of natural radon emissions conducted by the National Radiological Protection Board and the findings are being considered.

C. EEC Regulations

Council Directive No. 76/403/EEC (OJ No L 108, 26.4.1976, p 41) Regulates disposal of polychlorinated biphenyls and polychlorinated terphenyls. Establishes that PCBs should be disposed of by authorized persons, in a manner which will prevent contamination to the environment. The cost of the disposing of PCB articles shall be assumed by the bearer of the item for disposal.

Council Directive No. 76/769/EEC (OJ No L 262, 27.9.1976, p 201) Amended by Council Directive No. 83/478/EEC (OJ No L 263, 19.9.1983, p 33); restricts the marketing and use of particular dangerous substances, including the asbestos mineral crocidolite and products that contain it.

Council Directive No. 83/477/EEC (OJ No L 263, 24.9.83, p 25) Provides for the protection of workers from exposure to asbestos in the workplace, with specifics relating to asbestos spraying.

Council Directive No. 85/610/EEC (OJ No. L375, 31.12.85, p 1) Amends Council Directive 76/769/EEC (OJ No. L262, 27.9.76, p.201) on the marketing and use of asbestos. It adds the prohibition of the sale or use of paints and varnishes containing asbestos, or for use with asbestos spraying.

Council Directive No. 78/319/EEC (OJ No. L 84; 31.3.1978, p 43) Directs European communities to regulate the disposal of toxic and dangerous waste, including asbestos.

D. Key Compliance Definitions

- **Asbestos** = any of the following minerals; crocidolite, amosite, chrysotile, fibrous actinolite, fibrous anthophyllite, fibrous tremolite and any mixture containing any of those minerals.
- **Asbestos Cement** = material which is predominantly a mixture of cement and asbestos and which when in a dry state has a density of greater than 1 ton per

cubic meter.

- **Asbestos Coating** = a surface coating which contains asbestos
- **Asbestos Insulation** = any material containing asbestos and used for thermal, acoustic or other insulation purposes (including fire protection) except for the following:
 - asbestos cement or asbestos insulating board, or
 - any article of bitumen, plastic, resin, or rubber which contains asbestos, and the thermal and acoustic properties of which are incidental to its main purpose.
 - film, foil, resin or rubber coated asbestos textiles, primarily used for fire protection.
- **Asbestos Insulating Board** = any sheet, tile, or building board consisting of a mixture of asbestos and other material which mixture when in a dry state has a density greater than 500 kilograms per cubic meter.
- **Asbestos Spraying** = the application by spraying of any material containing asbestos to form a surface coating, but does not include the application by spraying any bituminous composition containing less than 10 percent by weight of asbestos to motor vehicles for the purpose of undersealing.
- **Disposal of Toxic and Dangerous Waste** =
 - the collection, sorting, carriage and treatment of toxic and dangerous waste, as well as its storage and tipping above or underground.
 - the transformation operations necessary for its recovery, re-use, or recycling.
- **Disposal of PCBs** =
 - the collection and/or destruction of PCB
 - the transformation operations necessary for regenerating PCB
- **Fibers** = particles of length greater than 5 micrometers, a diameter of less than 3 micrometers and having a length to breadth ratio of 3:1, observed by transmitted light under phase contrast conditions at a magnification of approximately 500x.
- **PCBs** = polychlorinated biphenyls, polychlorinated terphenyls, or mixtures containing one or both of such substances.
- **Service Life** = should be regarded as the period during which the item remains in efficient working order and good repair such that the release of PCBs or PCTs does not occur. When the item leaks or seeps any injurious substance (PCB/PCT) it should be regarded as having reached the end of its service life unless the item can be properly repaired.

- Waste = any substance or object which the holder disposes of or is required to dispose of pursuant to the provisions of national law in force.
- Work With Asbestos Insulation or Asbestos Coating = work in which asbestos insulation or asbestos coating is removed, repaired, or disturbed and includes such work in any supervisory or ancillary capacity.
- Toxic and Dangerous Waste = any waste containing or contaminated by the substances or materials listed below and in such quantities or in such concentrations as to constitute a risk to health or the environment.

**SPECIAL PROGRAMS MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
All installations	9-1 through 9-2	(1)(2)
If the installation produces, stores, or treats toxic and dangerous wastes	9-3 through 9-5	(1)(2)(4)
If the installation has PCBs	9-6 through 9-14	(1)(2)(3)(4)(6)(7)
If the installation has asbestos	9-15 through 9-28	(1)(2)(6)(7)(9)(10)

***CONTACT/LOCATION CODE:**

- (1) Environmental Planning (BCE)
- (2) BEE
- (3) Exterior Electric Shop (BCE)
- (4) DRMO
- (5) Contract Programmer (BCE)
- (6) Contract Management (BCE)
- (7) Chief of Operations and Management (BCE)
- (8) School Principal
- (9) Asbestos Program Officer
- (10) Asbestos Operations Officer

**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>9-1. Determine action or changes since previous review of Special Programs.</p> <p align="center">...</p>	<p>Obtain a copy of the previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p>
<p>9-2. The installation should maintain a current file of United Kingdom, U.S. Air Force, DoD and local regulations on Special Programs.</p> <p align="center">...</p>	<p>Determine if the following documents are maintained and kept current at the installation: (1)(2)</p> <ul style="list-style-type: none"> - The Asbestos (Prohibitions) Regulations 1985 - The Asbestos (Prohibitions) (Amendment) Regulations 1988 - (76/403/EEC) Council Directive of 6 April 1976, "on the disposal of polychlorinated biphenyls and polychlorinated triphenyls" - (78/319/EEC) Council Directive of 20 March 1978, "on toxic and dangerous waste" - The Asbestos (Licensing) Regulations 1983 - Department of the Environment, Waste Management Paper No. 6, "Polychlorinated Biphenyl (PCB) Wastes" - Department of the Environment, Waste Management Paper No. 18, "Disposal of Asbestos Waste." <p align="center">...</p>
<p>9-3. Installations that store, treat, and/or dispose of toxic and dangerous wastes must obtain a permit (78/319/EEC, Article 9).</p> <p align="center">...</p>	<p>Determine whether the installation treats, stores or disposes of any of the wastes listed in Appendix IX-1.</p> <p>Determine whether the installation has obtained a permit. Examine a copy of the permit for: (1)(2)</p> <ul style="list-style-type: none"> - the type and quantity of waste - technical requirements - precautions to be taken - disposal site(s) - method of disposal - specific conditions to be followed. <p>Confirm that requirements specified in permit are being followed.</p> <p align="center">...</p>
<p>9-4. Installations that produce, store, and/or dispose of toxic and dangerous wastes are required to keep records (78/319/EEC, Article 14).</p> <p align="center">...</p>	<p>Confirm that records of the following are kept on such waste(s): (1)(2)</p> <ul style="list-style-type: none"> - quantity - physical characteristics - chemical characteristics - origin - method of disposal - site of disposal - date of receipt of waste - date of disposal of waste. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>9-5. Installations that transport toxic and dangerous wastes are required to keep certain forms with the waste (78/319/EEC, Article 14).</p>	<p>Examine a random sample of waste to be shipped to verify that forms containing the following accompany the waste: (1)(2)(4)</p> <ul style="list-style-type: none"> - nature of the waste - composition of the waste - volume or mass of the waste - name and address of the producer (or previous holder) - name and address of the next holder or final disposer of the waste - location of final disposal site.

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**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p align="center">PCBs</p> <p>9-6. PCB equipment located in open areas near human activity should be removed from service and replaced with non-PCB equipment (Waste Management Paper, No.6 8.2, Waste Management Paper No. 6, "PCB Wastes").</p> <p align="center">...</p> <p>9-7. PCB items must be clearly labeled with contents (The Control of Pollution (Supply and Use of Injurious Substances) Regulation 1986(9), Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p> <p>9-8. PCB transformers and capacitors should be examined regularly for leaks (The Control of Pollution [Supply and Use of Injurious Substances] Regulation 1986[9], Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p> <p>9-9. Small capacitors that contain PCB-containing dielectric fluids are subject to certain restrictions (Control of Pollution [Supply and Use of Injurious Substances] Regulations, 1980, Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p>	<p>Review areas where PCB equipment is in use. Determine if items such as fluorescent lighting have been changed to non-PCB items. (3)(4)(7)</p> <p>If PCB items are still in use, determine if there is a schedule for their removal and disposal.</p> <p align="center">...</p> <p>Examine any PCB transformers and capacitors for labeling. (3)(4)(7)</p> <p align="center">...</p> <p>Determine if the installation has a schedule for inspecting transformers and capacitors. (1)(2)(3)(6)(7)</p> <p>Review records for citations of transformers and capacitors leaking. (1)(2)</p> <p>Where leaks are noted determine whether repairs were made or the unit was removed from service.</p> <p align="center">...</p> <p>Determine whether installation has any small capacitors that contain PCB dielectric fluid. (1)(2)(3)(7)</p> <p>If so, verify that they contain:</p> <ul style="list-style-type: none"> - less than or equal to 49% chlorine - less than or equal to 3.5% pentachlorinated or more highly chlorinated biphenyls. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>9-10. Users of any devices that use PCB-containing heat-transmitting fluid in a closed circuit heat-transfer capacity are required to progressively reduce the PCB content of the fluid in those devices (Control of Pollution [Supply and Use of Hazardous Substance] Regulations 1980, Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p>	<p>Determine whether installation has any such devices in use. (1)(2)(3)</p> <p>Confirm that best practicable means are used to reduce the PCB content of the device(s) to equal to or less than 0.1% through the introduction of new fluid from time to time.</p> <p align="center">...</p>
<p>9-11. PCB equipment should be handled with extreme care (Waste Management Paper No.6 8.6, Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p>	<p>Review procedure for taking PCB equipment out of service. It should include the following: (1)(2)(3)</p> <ul style="list-style-type: none"> - Protective clothing including gloves should be worn. - Hands should be washed after handling. - No smoking, drinking, or eating should be allowed in the area. - Transfers should take place on hard surfaces that are not drained. - Any spills that occur should be cleaned up with sawdust or other flammable absorbent. <p align="center">...</p>
<p>9-12. PCB wastes should be placed in heavy-duty, labeled drums (Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p>	<p>Observe PCB wastes waiting for transport and determine if they meet the listed criteria. (3)(4)(7)</p> <p align="center">...</p>
<p>9-13. PCB transformers and capacitors must be properly disposed of when taken out of service (CoPA [Supply and Use of Injurious Substances] Regulation 1986[17], Waste Management Paper No. 6, "PCB Waste").</p> <p align="center">...</p>	<p>Discuss disposal process for PCBs. (3)(4)(7)</p> <p>Determine if PCBs are disposed of through high temperature concentration.</p> <p>PCB fluids in concentrations greater than 1% may be considered special waste and require special disposal manifests (See Section III, Hazardous Waste Protocol).</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>9-14. Installations must be authorized or use authorized facilities to dispose of PCBs or PCB-contaminated items (76/403/EEC, Waste Management Paper No. 6, "PCB Waste").</p>	<p>Determine whether installation has any PCB waste. (1)(2)(3)(4) Confirm that only authorized facilities are used for the disposal of such waste.</p>

(1) Environmental Planning (BCE) (2) BEE (3) Exterior Electric Shop (BCE) (4) DRMO (5) Contract Programmer (BCE) (6) Contract Management (BCE) (7) Chief of Operations and Management (BCE) (8) School Principal (9) Asbestos Program Officer (10) Asbestos Operations Officer

**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p align="center">ASBESTOS</p> <p>9-15. Installations may need a license to work with asbestos (Regulations 3 and 4 of the Asbestos [licensing] Regulations 1983).</p> <p align="center">...</p> <p>9-16. Installations conducting asbestos work must ensure that those working with the asbestos are under medical surveillance (Asbestos [Licensing] Regulations 1983 [effective 1984]).</p> <p align="center">...</p> <p>9-17. Installations may be exempt from these regulations if determined by the Health and Safety executive (Asbestos [Licensing] Regulations 1983 [effective 1984]).</p> <p align="center">...</p> <p>9-18. The use of crocidolite, amosite, and products containing these minerals is prohibited (Asbestos [Prohibitions] Regulations 1985 [1988]).</p> <p align="center">...</p>	<p>Determine if the installation is doing any work with asbestos (removal or other mitigation activities). (1)(2)(7)(9)(10)</p> <p>Determine if authorities have been notified at least 28 days in advance of the asbestos work and if a license has been issued or waived. (1)(2)(7)(9)(10)</p> <p>If there is a license, review it and determine if the specifications of the license are being met. (1)(2)(6)(7)(9)(10)</p> <p>In areas where the asbestos work is taking place, notification should be given to persons in the vicinity; exposure of these individuals should be limited to the lowest level practical. (7)(9)(10)</p> <p>Confirm that if contractors are used for asbestos work, that they have been issued a license by the Health and Safety Executive. (6)(7)(9)(10)</p> <p align="center">...</p> <p>Review installation records for employees working with asbestos to confirm that medical exams were given prior to beginning work. (1)(2)(9)(10)</p> <p>Determine if they have routine medical examinations no less than once every two years. (2)</p> <p>Medical certificates of the employees should be kept on file for at least four years. (2)</p> <p align="center">...</p> <p>Determine if the installation claims itself as exempt. (1)(2)</p> <p>Review exemption certificate.</p> <p align="center">...</p> <p>Determine that the installation is no longer using these products, with the exception of those already in place or in the process of those being removed. (1)(2)(7)</p> <p align="center">...</p>

(1) Environmental Planning (BCE) (2) BEE (3) Exterior Electric Shop (BCE) (4) DRMO (5) Contract Programmer (BCE) (6) Contract Management (BCE) (7) Chief of Operations and Management (BCE) (8) School Principal (9) Asbestos Program Officer (10) Asbestos Operations Officer

**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>9-19. The use of asbestos - containing paints and varnishes, is prohibited (Asbestos [Prohibitions Amendments] Regulations 1988, para. 2).</p> <p align="center">...</p>	<p>Determine that the installation does not supply or use asbestos - containing paint or varnish in this manner. (1)(2)(7)</p> <p>(NOTE: This regulation does not apply to bituminous compositions containing less than 10% [by weight] asbestos that are sprayed on vehicles as undersealing.)</p> <p align="center">...</p>
<p>9-20. If the installation disposes of asbestos products at a landfill on-base, documentation about the waste must be kept (Asbestos [Prohibitions] Regulations 1985 [1988]).</p> <p align="center">...</p>	<p>Determine if the installation is disposing of asbestos at a base-operated landfill. (1)(2)(7)(9)(10)</p> <p>Review permit to determine if the landfill is licensed to handle asbestos waste. (1)(2)</p> <p>Asbestos waste being disposed of in a landfill should be done in an appropriate manner.</p> <p align="center">...</p>
<p>9-21. Installations that operate landfills licensed to accept asbestos must maintain a record of asbestos waste disposal (6.4 of Waste Management Paper No.18, Waste Management Paper No.18, Chapter 6 Disposal of Asbestos Waste).</p> <p align="center">...</p>	<p>Review landfill records for asbestos waste disposal.</p> <p>Determine if the disposal of the asbestos waste is done at least 2 meters from the working area to prevent any disturbance of the waste once it is deposited. (1)(2)(7)</p> <p>Operations that dispose of large quantities of asbestos waste should provide safety equipment, vehicle cleaning areas, personal hygiene areas, personal protective clothing and equipment. (1) (2)(9)(10)</p> <p align="center">...</p>
<p>9-22. Installations disposing of asbestos should take certain precautions (Waste Management Paper No.18, Waste Management Paper No.18, Chapter 6 Disposal of Asbestos Waste).</p> <p align="center">...</p>	<p>Installations that have asbestos removal operations should ensure that the following criteria are met: (1)(2)(6)(7)(9)(10)</p> <ul style="list-style-type: none"> - Dust and fiber release to the environment during transportation should be prevented by using plastic, double lined sacks. - Wastes that contain crocidolite must be clearly marked so. - Vehicles used to transport asbestos waste should be cleaned before leaving the landfill site. - Transporters of asbestos waste should have instructions for handling spills and other emergency situations. <p align="center">...</p>

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SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>9-23. Installations producing, storing, or disposing of asbestos waste must obtain a permit (article 9 EEC directive 78/319/EEC [OJ No L 84, 31.3.1978, p.43]).</p> <p align="center">...</p>	<p>Interview BCE regarding the installations asbestos activities. (1)(7)</p> <p>Review permit to determine if the base is complying within the scope of the permit. (1)(2)</p> <p>Items in the permit should include:</p> <ul style="list-style-type: none"> - type and quantity of waste - the technical requirements - the precautions to be taken - the disposal sites(s) - the methods of disposal. <p align="center">...</p>
<p>9-24. Installations which produce, store, or dispose of asbestos must maintain records (Article 14, para 1, 78/319/EEC [OJ No L 84, 31.3.1978, p.43]).</p> <p align="center">...</p>	<p>Determine if the installation maintains the following records on asbestos: (1)(2)(9)(10)</p> <ul style="list-style-type: none"> - quantity - nature - physical and chemical characteristics - origin - method of disposal - site of disposal including the dates and receipts. <p>This information should be available for review by authorities on request.</p> <p align="center">...</p>
<p>9-25. Installations which transport asbestos must meet certain requirements (Article 14, para 2, 78/319/EEC [OJ No L 84, 31.3.1978, p.43]).</p> <p align="center">...</p>	<p>Interview transportation branch regarding asbestos transportation and determine if an identification form containing the following information accompanies the asbestos load: (1)(2)(7)(9)(10)</p> <ul style="list-style-type: none"> - nature - composition - volume, mass, or weight - name and address of the producer or the previous holder(s) - name and address of the next holder or of the final disposer - location of the site of final disposal where known. <p>Review previous documents which should be maintained on file at the installation.</p> <p align="center">...</p>
<p>9-26. Installations are prohibited from using or importing into the United Kingdom crude, fiber, flake, powder or waste crocidolite or amosite except for purposes of assessment or evaluation (The Asbestos [Prohibitions] Regulations 1985, para. 3 and 4).</p>	<p>Verify that the installation does not import crocidolite or amosite in any form. (1)(2)(7)</p> <p>Confirm that the installation does not use crocidolite or amosite or any products containing these minerals or allow any personnel to work with them unless:</p> <ul style="list-style-type: none"> - The products were in use before 1 January 1986. - The work is in connection with disposing of such products.

(1) Environmental Planning (BCE) (2) BEE (3) Exterior Electric Shop (BCE) (4) DRMO (5) Contract Programmer (BCE) (6) Contract Management (BCE) (7) Chief of Operations and Management (BCE) (8) School Principal (9) Asbestos Program Officer (10) Asbestos Operations Officer

**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p align="center">...</p> <p>9-27. The spraying of asbestos is prohibited (The Asbestos [Prohibitions] Regulations 1985, para. 6).</p> <p align="center">...</p> <p>9-28. The installation of asbestos insulation is prohibited (The Asbestos [Prohibitions] Regulations 1985, para. 7).</p>	<p align="center">...</p> <p>Confirm that the installation does not engage in or contract for any work involving the spraying of asbestos.(1)(2)(9)(10)</p> <p align="center">...</p> <p>Verify that the installation neither contracts for nor uses personnel to install either thermal or acoustic insulation containing asbestos.(1)(2)(6)</p>

(1) Environmental Planning (BCE) (2) BEE (3) Exterior Electric Shop (BCE) (4) DRMO (5) Contract Programmer (BCE) (6) Contract Management (BCE) (7) Chief of Operations and Management (BCE) (8) School Principal (9) Asbestos Program Officer (10) Asbestos Operations Officer

Appendix IX-1

List of Toxic or Dangerous Substances and Materials

The following list consists of toxic or dangerous substances and materials selected as requiring priority consideration.

- 1 Arsenic; arsenic compounds
- 2 Mercury; mercury compounds
- 3 Cadmium; cadmium compounds
- 4 Thallium; thallium compounds
- 5 Beryllium; beryllium compounds
- 6 Chrome 6 compounds
- 7 Lead; lead compounds
- 8 Antimony; antimony compounds
- 9 Phenols; phenol compounds
- 10 Cyanides, organic and inorganic
- 11 Isocyanates
- 12 Organic-halogen compounds, excluding inert polymeric materials and other substances referred to in this list or covered by other Directives concerning the disposal of toxic or dangerous waste
- 13 Chlorinated solvents
- 14 Organic solvents
- 15 Biocides and phyto-pharmaceutical substances
- 16 Tarry materials from refining and tar residues from distilling
- 17 Pharmaceutical compounds
- 18 Peroxides, chlorates, perchlorates and azides
- 19 Ethers
- 20 Chemical laboratory materials, not indentifiable and/or new whose effects on the environment are not known
- 21 Asbestos (dust and fiber)
- 22 Selenium; selenium compounds
- 23 Tellurium; tellurium compounds
- 24 Aromatic polycyclic compounds (with carcinogenic effects)
- 25 Metal carbonyls
- 26 Soluble copper compounds
- 27 Acids and/or basic substances used in the surface treatment and finishing of metals

Source: Council Directive of 20 March 1978 (OJ No L 84, 31.1.1978, p. 43 (78/319/EEC))

INSTALLATION	COMPLIANCE CATEGORY: SPECIAL PROGRAMS United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS		

UNITED KINGDOM

Section X

Water Quality Mangement

SECTION X

WATER QUALITY

A. Applicability

Drinking Water

Installations in the United Kingdom (U.K.) use drinking water everyday. Though standards of water quality are different for the U.K. than for the U.S., it has been policy that the more stringent standards be met for U.S. military personnel stationed overseas.

As mentioned in previous sections, the Property Service Agency (PSA) plays an active role in water quality testing. Another unique aspect of water quality in the U.K. is the use of fluoride; the U.K. does not fluoridate water. The result of this difference and the possibility of other differences may require that there be development of some type of agreement as to what water quality standards will be followed.

Persons reviewing this section will need to locate agreements of such standards. These should be in the form of either a license, permit, code of practice, base operating instruction (OI), base regulation, or other memorandum of agreement.

Waste Water

Installations in the U.K. which have sewage treatment plants, oil water separators, or any other process which has a discharge are obligated to comply with discharge requirements set up in the U.K.

B. United Kingdom Laws and Regulations

Drinking Water

The U.K. uses a National Rivers Authority (NRA) to regulate the cycle of water. There are nine NRA regions in England and one in Wales.

The legislation for water is the Water Act 1989 which covers water supply and distribution.

Other technical requirements for water quality are found in various technical instructions, EEC regulations adopted by the U.K., and specific requirements set out through a permit of license by the NRA. (NOTE: this permit is not

applicable to crown lands, but a consultation does take place.

Waste Water

The Water Act of 1989 provides some regulation for the discharge of waste water, including in particular the portion entitled "Discharges into Sewers." This regulation does not set up specific standards for effluent limitations, but does designate the water authority as the responsible party for permitting discharges.

The Property Services Agency (PSA), a U.K. agency, monitors the effluent discharges, but may have an agreement with the U.S. to allow additional sampling and monitoring by the Bioenvironmental Engineering office (BEE). The reviewer of this section will need to understand the agreements established by the two offices to ensure that it is the U.S. aspect of the section is being evaluated, as opposed to what the PSA is doing.

All discharges need consents; consents give the required standard of discharge for compliance and can take into account the following:

- the condition of the water immediately up-stream of the proposed discharge
- the nature of the discharge (volume and composition)
- the potential effects of the discharge on the receiving water
- the flow rate and mixing volumes available for self-purification and dilution before further discharges enter the receiving water.

At some bases sample results are analyzed by the applicable National Rivers Authority, compared to standards, and technical interpretations provided to the bases along with analysis figures. Corrective actions may also be provided by experts at this organization.

C. EEC Regulations

Drinking Water

EEC Council Directive OJ No L 194, 25.9.1975, "Drinking Water Quality"
Establishes standards for drinking and bathing water.

EEC Council Directive OJ No L 271, 29.10.1979, "Drinking Water Sampling and Analysis" Provides standards for measuring and sampling frequency for drinking water.

EEC Council Directive OJ No L 229, 30.8.1980, "Water for Human Consumption - Quality" Sets up more standards regarding elements in drinking water and their limits.

Waste Water

Some EEC regulations are being developed, but none that apply to Air Force Installations have been located. In Department of the Environment Circular 17/84, some limit values have been adopted that are EEC requirements, but are for specific industry discharges.

D. Key Compliance Definitions

- **Accuracy** = the difference between the true value of the parameter examined and the average experimental value obtained.
- **Limit of Detection** = the minimum value of the parameter examined that is possible to detect.
- **Precision** = the range within which 95% of the results of measurements made on a single sample, using the same method, are located.
- **Reference Method of Measurement** = the designation of a measurement principle or a succinct description of a procedure for determining the value of the parameters listed in Annex 1 of the EEC Directive OJ L 271, 29.10.1979.

**WATER QUALITY MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: *
DRINKING WATER		
All installations	10-1 through 10-12	(1)(2)(4)(5)
WASTE WATER		
All installations	10-13 through 10-15	(1)(2)
If the installation operates a waste water treatment plant	10-16 through 10-20	(1)(2)(3)(5)
If the installation discharges effluent	10-21 through 10-24	(1)(2)(3)
If the installation uses de-icing compounds on runways	10-25	(1)(2)

***CONTACT/LOCATION CODE:**

- (1) BCE (Environmental Planning)
- (2) BEE (Bioenvironmental Engineering)
- (3) Wastewater Treatment Plant Superintendent
- (4) BCE (Water Treatment Plant Supervisor)
- (5) Property Services Agency (PSA)

**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>DRINKING WATER</p> <p>10-1. Determine action or changes since previous review of drinking water.</p> <p align="center">...</p> <p>10-2. The installation should maintain a current file of applicable United Kingdom and local regulations on drinking water.</p> <p align="center">...</p> <p>10-3. Installations must inspect, maintain, and sample drinking water systems on a regular basis (Technical Instruction CE No. 22, Sampling of Drinking Water and Water From Swimming Pools).</p> <p align="center">...</p> <p>10-4. Sampling of drinking water quality should be done at specified intervals (Technical Instruction CE No. 22).</p> <p align="center">...</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p> <p>Examine file of regulations. Determine if the following documents are maintained and kept current: (1)(2)</p> <ul style="list-style-type: none"> - Technical Instruction for Sampling of Drinking Water and Water for Swimming Pools - Drinking Water -- Quality; EEC Council Directive OJ No L 194, 25.9.1975 p 26, (75/440/EEC) - Drinking Water - Sampling - Analysis; EEC Council Directive OJ No L 271, 29.10.1979 p 44, (79/869/EEC) - Water for Human Consumption - Quality; EEC Council Directive OJ No L 229, 30.8.1980, p 11, (80/778/EEC) - Any local water authority regulations. <p align="center">...</p> <p>Interview PSA and BCE to determine if the installation has a regular inspection and maintenance program for the base drinking water system.(1)(5)</p> <p>Determine if samples are taken from the water supply on a regular basis by trained individuals.</p> <p align="center">...</p> <p>Determine if the PSA has established a schedule for sampling the installation drinking water. (5)</p> <p>For water from public supply: this schedule should be at least once every 6 months for bacteriological sampling and once every year for chemical sampling. Where chlorine is added to the drinking water a Palin test must be conducted as well.</p> <p>For new water systems sampling must take place before it is put into operation.</p> <p>The installation should sample water immediately if there is suspicion that the water is contaminated.</p> <p>(NOTE: These frequencies may be affected by new legislation.)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>10-5. Sampling must be done in accordance with laboratory specifications to ensure accuracy. (Technical Instruction CE No. 22).</p>	<p>Determine if sampling is done in the following manner: (1)(2)(4)</p> <ul style="list-style-type: none"> - Samples for chemical examination: <ul style="list-style-type: none"> - Two samples should be taken at each sampling point; one in a glass container and one in a plastic container that also contains an acid inhibitor. - The glass bottle must be rinsed three times with the water that is to be tested, then filled to the top and capped. - The plastic bottle with the inhibitor should be filled with the sample water just below the rim of the bottle and capped. (The plastic bottle does not get rinsed.) - When gathering samples from a tap or a pump, the water should flow for a few minutes so stagnant water is not sampled. - Samples from a tank, well, or water body can be taken by plunging the neck of the bottle below the surface of the water or by using a non-metallic dipper to pull the water out. Care should be taken so samples are not surface water and do not contain sediment from the bottom.

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COMPLIANCE CATEGORY: WATER QUALITY United Kingdom	
REGULATORY REQUIREMENTS	REVIEWER CHECKS
7-5. (Continued)	<p>Samples for bacteriological examination:</p> <ul style="list-style-type: none"> - Sterile sample bottles that contain a chlorine neutralizer must be used. (These are usually supplied by the laboratory.) <ul style="list-style-type: none"> --The bottles should remain capped until the sample is taken. --When removing the cap it must not come into contact with any surfaces that could contaminate the sample. --fill the bottle up to the neck and immediately cap it. - When gathering samples from a tap or a pump: <ul style="list-style-type: none"> --The inside of the tap or pump must be wiped with a clean cloth. --The tap or pump must then be sterilized heating it with a piece of cotton wool soaked in methylated spirits or by using a butane blow lamp until the tap or pump become too hot to touch. (Note: plastic components will melt under this treatment and therefore should not be a sample point.) --After sterilization the water must be run for at least 2 minutes. --The sample can now be collected by filling it directly from the outlet. - When gathering samples from a tank or stream: <ul style="list-style-type: none"> --The bottle should be inverted and pushed to a depth of at least 300mm. --Once submerged the bottle can be tipped so it is pointing upwards and towards the current (if no current the bottle should be pushed forward in the water) until full. NOTE: care should be taken so none of the neutralizer is lost. - When gathering samples from a well: <ul style="list-style-type: none"> --only glass bottles with ground glass stoppers should be used when sampling from a well.

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**COMPLIANCE CATEGORY:
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United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>7-5. (Continued)</p> <p align="center">...</p>	<ul style="list-style-type: none"> - -The bottle should be capped with a cord around the neck of the bottle and a loop around the stopper; the bottle is then lowered into the well. - -The stopper should be pulled out by pulling sharply on the cord; the water sample is then collected and the stopper should be placed on the sample. <p>(NOTE: If special equipment is available to take a well sample it should be used instead.)</p> <p align="center">...</p>
<p>10-6. Samples must be properly labeled (Technical Instruction CE No. 22).</p> <p align="center">...</p>	<p>If possible, inspect sample bottles to see if the date and time of collection is clearly marked on the bottle.(1)(2)(4)</p> <p align="center">...</p>
<p>10-7. Water samples must have the appropriate questionnaire Form W2063(A-C) filled out to accompany the sample to the lab.</p> <p align="center">...</p>	<p>Determine if Form W2063B is filled out for water samples.(4)(5)</p> <p>Review form for completeness and accuracy.</p> <p align="center">...</p>
<p>10-8. If any sample results exceed the maximum admissible concentration, appropriate actions must be taken (Technical Instruction CE No. 22).</p> <p align="center">...</p>	<p>Determine if the installation has had water samples with results that exceeded the maximum admissible concentration (MAC).(1)(2)(4)</p> <p>If the MAC was exceeded, determine whether the following actions were taken:</p> <ul style="list-style-type: none"> - Additional samples were taken. - An alternative water source was made available for drinking and cooking. - If lead was found to exceed 50 µg/l, additional sampling must continue on a monthly basis from the same point. This sample should be taken after allowing the water to remain in contact with the pipes for 16 hours before sampling. - If lead was found to exceed 100 µg/l, notice must be given at the draw-off point stating that the water should be run for at least 2 minutes before using for drinking or cooking. - If water samples continue to exceed the lead concentration limits, further action must be taken. - If the water deteriorates lead pipes, either the water must be treated to stop corrosion of the lead into the water or the lead pipes must be replaced with more appropriate piping. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>10-9. Appropriate water quality records should be maintained at the installation (Technical Instruction CE No. 22).</p> <p align="center">...</p>	<p>Review records for water quality assessment to determine if they are kept up-to-date. (1)(2)(4)</p> <p>(NOTE: Water quality reports should have extra information for USAF drinking water.)</p> <p align="center">...</p>
<p>10-10. Installations must meet the drinking water quality requirements set forth by the EEC (EEC Council Directive OJ No. L 194, 25.7.1975, p 26).</p> <p align="center">...</p>	<p>Determine if the installation or Regional Water Authority maintains drinking water quality requirements required by the EEC. (See Appendix 10-1 for details of the water quality requirements.) (1)(2)</p> <p align="center">...</p>
<p>10-11. Installation must meet the water sampling standards set forth by the EEC (EEC Council Directive OJ No. L 279 29.10.79 p 44).</p> <p align="center">...</p>	<p>Determine if the installation maintains water sampling standards set by the EEC. (1)(2)(4)</p> <p align="center">...</p>
<p>10-12. Installations must meet the water quality standards for human consumption set forth by the EEC (EEC Council Directive OJ No. L 229 30.8.1980, p 11).</p>	<p>Determine if the installation maintains water quality at the level required by the EEC. (1)(2)(4)</p>

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**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>WASTE WATER</p> <p>10-13. Determine action or changes since previous review of waste water management</p> <p align="center">...</p> <p>10-14. The installation should maintain a current file of applicable United Kingdom and local regulations on waste water management.</p> <p align="center">...</p> <p>10-15. Installations may be required to follow specific guidelines set by the local authorities (Department of Environment Circular 17/84 "Pollution of Inland Waters").</p> <p align="center">...</p> <p>10-16. Installations which operate waste water treatment plants may be required to have a permit (Dept of Environmental Circular 17/84, "Pollution of Inland Waters").</p> <p align="center">...</p> <p>10-17. Installations with sewage treatment plants must comply with relevant Works Procedures Codes (Technical Instruction CE No. 18).</p>	<p>Obtain a copy of previous review and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p> <p>Examine file of regulations. Determine if the following documents are maintained and kept current. (1)(2)</p> <ul style="list-style-type: none"> - local ordinances - SOFA agreements - Works Procedures Code WP 90 - PSA Handbook of Sewage Treatment (as amended) - Code of Practice for Small Sewage Treatment Works and Cesspools (BS 6297 :1983) - Operation and Management of Small Sewage Works (HMSO). <p align="center">...</p> <p>Interview environmental coordinator regarding specific local requirements for waste water management. (1)</p> <p>Evaluate installation for compliance with these requirements.</p> <p align="center">...</p> <p>Determine whether the installation operates a waste treatment plant on the base. (1)(2)</p> <p>If so, determine if it has an operating permit and if it is meeting the requirements of this permit. (1)(2)(3)</p> <p align="center">...</p> <p>Interview Property Services Agency (PSA) and Bioenvironmental Engineering (BEE) about sewage treatment at the installation. (5)</p> <p>Determine if the following inspection schedule is used: (1)(2)(5)</p> <ul style="list-style-type: none"> - routine maintenance inspections in accordance with DW 529 at two year intervals (structures, fences etc.) - inspections of operational efficiency at 1-year intervals, in accordance with DW 529a, by a qualified civil engineer - Professional appraisal in accordance with WP 101 at least every 4 years. <p align="center">...</p>

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**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>10-18. Installations that have any of the types of sewage treatment plants listed must be inspected at least once a month to ensure proper operation and maintenance of the plant (Technical Instruction CE Field Test, Permanganate and Turbidity Tests No. 18).</p> <p align="center">...</p>	<p>Determine if the installation has any of the following types of treatment plants:(1)(2)(3)</p> <ul style="list-style-type: none"> - sedimentation or septic tank filtration - sedimentation or septic tank filtration and final settlement with or without effluent polishing - sedimentation and discharge to sea - activated sludge (Simplex or similar process) - extended aeration - extended aeration with effluent polishing - contact stabilization - contact stabilization with effluent polishing - other biological processes (e.g., rotating disc, trickling filter). <p>If so, ensure that the plant is being inspected at least once a month by a qualified and responsible individual, and that he or she records substandard operations with appropriate remedial action in the plant operating diary.(1)(2)(3)</p> <p>Review the plant diary for unsatisfactory inspections and what remedial actions were required to take place.(3)</p> <p>Determine if the appropriate actions were taken to correct the substandard situation.(1)(2)(3)</p> <p align="center">...</p>
<p>10-19. Installations the process of starting a treatment plant may need to apply for consent to discharge from the local water authority (Department of Environment Circular 17/84, Welsh Office Circular 35/84; Pollution of Inland Waters)</p> <p align="center">...</p>	<p>Determine if the installation is in the process of starting up a waste water treatment plant. If so, review any applications for operation and discharge that are on file.(1)(2)(3)</p> <p align="center">...</p>
<p>10-20. Installations may need to provide information such as maps, layout of the plant, or other data to the local authority (Department of Environment Circular 17/84, Welsh Office Circular 35/84; Pollution of Inland Waters).</p> <p align="center">...</p>	<p>Interview personnel to determine if there were any requests from the local authorities for information, and if the information was provided.(1)(2)(3)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

REGULATORY REQUIREMENTS	REVIEWER CHECKS
<p>10-21. Installations that discharge trade or sewage effluent into inland surface and coastal waters may be required to apply for consent to discharge with local water authority (Pollution of Inland Waters, Dept. of Environment Circular 17/84, Annex 3 and Circular 18/85).</p> <p align="center">...</p>	<p>Determine whether installation applied for consent to discharge with local authority (if applicable). (1)(2)(3)</p> <p>Confirm that local water authorities have been consulted concerning limit values for the following List I and II substances and that those waters have not been exceeded:</p> <p>List I:</p> <ul style="list-style-type: none"> - mercury - cadmium - Hexachlorocyclohexane <p>List II:</p> <ul style="list-style-type: none"> - lead - chromium - zinc - copper - nickel arsenic. <p align="center">...</p>
<p>10-22. Local water authorities are authorized to obtain and take away samples of any effluent (Water Resources Act 1963).</p> <p align="center">...</p>	<p>Determine whether local water authorities have requested sampling of any effluent on the installation. (1)(2)(3)</p> <p align="center">...</p>
<p>10-23. Installations that discharge waste water to an off-base treatment facility may require a permit to designate load limits (Dept of Environmental Circular 17/84, "Pollution of Inland Waters").</p> <p align="center">...</p>	<p>Determine if the installation discharges to an off-base treatment plant. (1)(2)</p> <p>Determine if the installation requires a permit to discharge. (1)(2)</p> <p>If a permit is required determine if effluent limits are met and any other requirements of the permit are followed. (1)(2)</p> <p align="center">...</p>
<p>10-24. Installations which discharge effluent into water bodies must sample the effluent once every 6 months; those which discharge onto land or through subsoil irrigation must sample effluent once every year (Technical Instruction CE No. 18). (Note: This sampling is done by the PSA.)</p>	<p>Determine from records and interviews that sampling occurs at appropriate intervals. (1)(2)(3)</p> <p>Determine if BEE is performing additional effluent sampling to meet U.S. standards. (2)</p>

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**COMPLIANCE CATEGORY:
WATER QUALITY
United Kingdom**

<p align="center">REGULATORY REQUIREMENTS</p>	<p align="center">REVIEWER CHECKS</p>
<p align="center">...</p> <p>10-25. Installations which use de-icing compounds on runways may be required to report applications and monitor runoff (Good Management Practice [GMP]).</p>	<p align="center">...</p> <p>Determine if the installation applies de-icer to runways.</p> <p>Review records of application and runoff monitoring.</p> <p>Determine if there is a correlation between application of de-icer and sewage effluent concentrations.</p>

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Water Treatment Plant Supervisor) (5) Property Services Agency (PSA)

APPENDIX X-1

STANDARDS FOR DRINKING WATER (PHYSICAL AND CHEMICAL)

Parameters	Expression of the results	Guide Level (CL)	Maximum Admissible Concentration (MAC)	Comments
Color	Hazen Units	1	20	
Turbidity	NTU Units	0.4	4	
Odor	Dilution number	0	2 at 12°C 3 at 25°C	
Taste	Dilution number	0	2 at 12°C 3 at 25°C	
Hydrogen ion concentration	pH unit	6.5 < pH < 8.5	5.5 (MRC) to 9.5	MRC is minimum required concentration.
Conductivity	$\mu\text{S cm}^{-1}$ at 20°C	400	1500	
Chlorides	Cl mg/l	25	400	Above 200mg/l may affect taste and corrosivity of water.
Sulphates	SO ₄ mg/l	25	250	Excessive concentration can cause gastrointestinal irritation when magnesium or sodium present.
Calcium	Ca mg/l	100	250	Scale formed at excessive concentrations.
Magnesium	Mg mg/l	30	50	
Sodium	Na mg/l	20	175	
Potassium	K mg/l	10	12	
Aluminium	Al mg/l	0.05	.02	
Total hardness	Ca mg/l	-	-	60 mg/l (MRC) in softened water
Alkalinity	HCO ₃ mg/l	-	-	30 mg/l (MRC) in softened water.

APPENDIX X-1 (Continued)

Parameters	Expression of the results	Guide Level (CL)	Maximum Admissible Concentration (MAC)	Comments
Nitrates	NO ₃ mg/l	25	50	Above 50 mg/l MO and water undertaker to be informed. Infants under 6 months at risk. Above 100 mg/l, low nitrate bottled water should be made available for infants.
Nitrites	NO ₂ mg/l		0.1	
Ammonium	NH ₄ mg/l	0.05	0.5	Excessive concentration encourages growth of organisms corrosion in pipes and less effective chlorination.
Kjeldahl Nitrogen (excluding N in NO ₂ and NO ₃)	N mg/l		1	
Total organic carbon (TOC)	C mg/l			The reason for any increase in the usual concentration must be investigated.
Dissolved or emulsified hydrocarbons (after extraction by petroleum ether); Mineral oils	µg/l		10	
Phenols (phenol index)	C ₆ H ₅ OH µg/l		0.5	Excluding natural phenols, which do not react to chlorine.
Surfactants (reacting with methylene blue)	µg/l (lauryl sulphate)		200	

APPENDIX X-1 (Continued)

Parameters	Expression of the results	Guide Level (CL)	Maximum Admissible Concentration (MAC)	Comments
Other organochlorine compounds not covered by pesticides etc	μA	1	100 of chlorine containing trihalomethanes taking account of the need for	Haloform concentrations must be as low as possible adequate chlorination
Iron	Fe $\mu\text{g/l}$	50	200	High concentrations affect taste, color, and turbidity; cause staining of laundry etc and aid growth of deposits in pipes
Manganese	Mn $\mu\text{g/l}$	20	50	(as for Iron)
Copper	Cu $\mu\text{g/l}$	100* 3000**	3000	Applies to any Sample. Concentration affected by the nature of the pipework but water as supplied at the curtilage should not be aggressive Remedial action by the water supplier is required if 1000 $\mu\text{g/l}$ is exceeded frequently or to an appreciable extent. Above 3000 $\mu\text{g/l}$ astringent taste, discoloration, and corrosion may occur.
Zinc	Zn $\mu\text{g/l}$	100* 5000**	5000	(as for copper but 2000 $\mu\text{g/l}$) Above 5000 $\mu\text{g/l}$ astringent taste, opalescence and sand-like deposits may occur.

APPENDIX X-1 (Continued)

Parameters	Expression of the results	Guide Level (CL)	Maximum Admissible Concentration (MAC)	Comments
Phosphorus	P ₂ O ₅ µg/l	400	5000	
Fluoride	F µg/l 8-12°C 23-30°C		1500 700	MAC varies according to average air temperature.
Residual Chlorine	Cl µg/l	100	300 50(MAC)	As FREE chlorine unless 2 hours contact time is provided for combined chlorine to be effective.
Barium	Ba µg/l	100	1000	
Silver	Ag µg/l		10	If, exceptionally, silver is used non-systematically to process the water, a MAC value of 80 µg/l may be authorized.
TOXIC SUBSTANCES				
Arsenic	As µg/l		50	Possible sources --weed killers, sheep dipping, tin-mining waste.
Cadmium	Cd µg/l		5	Possible sources --plated fitting.
Chromium	Cr µg/l		50	
Mercury	Hg µg/l		1	Possible source --mercury manometers.
Nickle	Ni µg/l		50	Possible sources --chrome or other plated fittings.
Lead	Pb µg/l		50	Where lead pipes are present, the lead content should not exceed 50 µg/l in a sample taken after flushing. If the sample is taken either directly or after flushing and the lead content frequently (or to an appreciable extent) exceeds 100 µg/l, suitable measures must be taken to reduce the exposure to lead on the part of the consumer.
Antimony	Sb µg/l		10	
Selenium	Se µg/l		10	

APPENDIX X-1 (Continued)

Parameters	Expression of the results	Guide Level (CL)	Maximum Admissible Concentration (MAC)	Comments
Pesticides & related products - - substances considered separately	$\mu\text{g/l}$		0.1	Pesticides and related products means: Insecticides: persistent organochlorine compounds, organophosphorous compounds, carbamates
- total			0.5	- herbicides - fungicides - PCBs and PCTs ¹
Polycyclic aromatic hydrocarbons	$\mu\text{g/l}$		0.2	- reference substaces: fluoranthene, benzo 3.4 fluoranthene, benzo 1.1.2 fluoranthene, benzo 3.4 pyrene, benzo 1.1.2 perylene, indeno (1,2,3 -cd) pyrene.

¹ PCB = poly-chlorinated biphenols (e.g., transformer coolants)
PCT = poly-chlorinated triphenols

* at outlets of pumping and/or treatment works and their sub-stations
** after the water has been standing for 12 hours in the piping and at the point where the water is made available to the consumer.

APPENDIX X-1 (Continued)

STANDARDS FOR SWIMMING POOL WATER (PHISICAL AND CHEMICAL)

The chemical quality of swimming pool, with the exception of the parameters in the table below, is to be generally as for drinking water and is set out in Appendix 6.

Parameters	Expression of the result	Guide Level (CL)	Maximum Admissible Concentration (MAC)	Comments
pH	pH Units	7.4 to 7.6	7.8 7.2 (MAC)	Below 7.2: corrosion, possible green water. Above 8.0: possible scale formation, water cloudy.
Ammonium	NH ₄ mg/l	0.25	0.5	Above 0.5: algae growth, corrosion, Chlorination less effeetive.
Kjeldahl Nitrogen	N mg/l	1.0	2.0	Above 1.0: chlorination less effeetive.
Free Residual Chlorine	Cl mg/l	1.5 to 2.0	3.0 1.0 (MAC)	Where chlorinated isocyanurates are used as the disinfectant 1.0 to 4.0 mg/l depending on the amount of cyanuric acid present.
Combined Residual Chlorine	Cl mg/l	0.5 to 1.0	1.0	Should not exceed 1/3 Total Residual Chlorine.
Total Residual Chlorine	Cl mg/l	1.5 to 2.0	3.0	
Total Alkalinity	CaCO ₃ mg/l	100		When using Calcium Hypochlorite. 150-180 When using Sodium Hypochlorite.
Total Hardness	CaCO ₃ mg/l	100		
Cyanuric Acid	mg/l	--	400	200 mg/l should not normally be exceeded. Chlorination less effective at the higher concentration.

Note: The above units are used in DOE publication "The Treatment and Quality of Swimming Pool Water"; 1 mg/l = 1000 µg/l.

APPENDIX X-1 (Continued)

MONITORING THE QUALITY OF SWIMMING POOL WATER

1. Chlorine residual levels and pH value should be monitored continually but this requires automatic equipment which is not installed in all PSA pools. Chlorine levels and pH value should therefore be checked 4 times daily as a minimum requirement.
2. Alkalinity and calcium hardness should be monitored daily but if results remain constant then monitoring may be reduced to once per week.
3. Safe and comfortable bathing conditions are best achieved by maintaining a balanced water condition. For further guidance see DOE publication "The Treatment and Quality of Swimming Pool Water" (HMSO).

Appendix X-2

Wastewater Testing

1. PSA uses a series of field tests to approximate the quality of sewage treatment. These field tests are performed often with more comprehensive analyses performed less frequently by the Department of the Environment's District Water Authority (the office that oversees the PSA).
2. Quick field tests help plant operators approximate turbidity/biochemical oxygen demand (BOD), permanganate test (Chemical Oxygen Demand), and pH test to optimize plant operations. Field test results should be confirmed with standardized testing such as the methods in "Standard Methods for Examination of Water and Wastewater" or an equivalent.
3. On-base sewage treatment plant effluent should be regularly sampled and comprehensively analyzed. Parameters analyzed should include Kjeldahl nitrogen, ammonia nitrogen, nitrite and nitrate nitrogen, total and volatile suspended solids, 5 day Biological Oxygen Demand, pH value, Chemical Oxygen Demand, orthophosphates, chloride as CL, total dissolved solids, lead, silver, copper, nickel, and other heavy metals.

INSTALLATION	COMPLIANCE CATEGORY: WATER QUALITY United Kingdom	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		