

**DECISION DOCUMENT
PETER KIEWIT LANDFILL**

U.S. DOE PORTSMOUTH

PIKE COUNTY, OHIO

MAY 1996

6.7	Ecological Risk Assessment	11
7.0	Description of Alternatives	11
7.1	Alternative #1: No Further Action	11
7.2	Alternative #2: Limited Action-Fencing/Signs, Deed Restrictions and Environmental Monitoring	12
7.3	Alternative #3: Capping, Vertical Subsurface Barriers, Continuation of Seep Collection System, Deed Restrictions, and Environmental Monitoring	12
7.3.1	Capping Options	13
7.3.1.1	Hazardous Waste Disposal Facilities Final Cover	13
7.3.1.2	Municipal Solid Waste Landfills Final Cover	14
7.3.2	Vertical Subsurface Barrier Options	14
7.3.2.1	Slurry Walls	14
7.3.2.2	Sheet Piling	15
7.4	Alternative #4: Vertical Subsurface Barriers, Continuation of Seep Collection System, Deed Restrictions, and Environmental Monitoring	15
8.0	Summary of Comparative Analysis of Alternatives	16
8.1	Overall Protection of Human Health and the Environment	17
8.2	Compliance with all State, Federal and Local Laws and Regulations	17
8.3	Long-term Effectiveness and Permanence	19
8.4	Reduction of Toxicity, Mobility, or Volume Through Treatment	19
8.5	Short-term Effectiveness	19
8.6	Implementability	20
8.7	Cost	20
9.0	The Selected Remedy	20
10.0	Statutory Determinations	22
10.1	Protection of Human Health and the Environment	23

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10.2 Compliance with Applicable or Relevant and Appropriate Requirements 23

10.3 Cost-Effectiveness 23

10.4 Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable 23

10.5 Preference for Treatment as a Principle Element 24

10.6 Source Control 24

11.0 Documentation of Significant Changes 24

Responsiveness Summary 25

1.0 Summary of Comments Received During the Public Comment Period 25

 1.1 Overview 25

 1.2 Summary of Significant Comments 25

2.0 Comments From the Community 26

3.0 Comments From the U.S. DOE 28

Appendices

Appendix A: Figures

Appendix B: Administrative Record Index

Appendix C: List of Federal and State ARARs

Appendix D: List of Acronyms

DECLARATION FOR THE DECISION DOCUMENT

SITE NAME AND LOCATION

United States Department of Energy, Pike County, Ohio
The Peter Kiewit Landfill Solid Waste Management Unit

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Peter Kiewit Landfill site on the U. S. DOE Reservation in Pike County, Ohio. The U. S. DOE site is being cleaned up under a Consent Decree between U. S. DOE and the State of Ohio and an Administrative Order signed by U. S. DOE and U. S. EPA. Both legal agreements were signed in 1989. This decision has been developed in accordance with the Resource Conservation and Recovery Act (RCRA) of 1976, the Comprehensive Environmental Response Compensation and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and with the Hazardous and Solid Waste Amendments (HSWA) of 1984. The documentation for the selection of a remedial action is part of the administrative record located in the Environmental Information Center in Waverly, Ohio. The specific documents include but are not limited to the Quadrant I RCRA Facility Investigation (RFI), the Peter Kiewit Landfill Corrective Measures Study (CMS), and the Peter Kiewit Landfill Preferred Plan. The most current administrative record index is attached to this Decision Document.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the site, if not addressed by implementing the response action selected in this Decision Document, may present a future risk to the environment, and/or human health.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy at the Peter Kiewit Landfill will address the principal threats posed by the site through containment of source materials and treatment of leachate. The major components of the selected remedial action include:

- The continuation of the seep collection system currently operating along the east side of the landfill. This system was installed in November of 1994 and collects leachate migrating from the landfill towards Big Run Creek. The leachate is then treated at the X-622 treatment plant located on the south central part of the DOE reservation (within QI).
- The placement of an engineered cap which meets RCRA Subtitle D requirements. This consists of a recompacted clay cap or equivalent. The cap material will be

covered with a drainage layer and a vegetative layer at least 30 inches in depth to prevent frost damage to the cap material.

- Institutional controls necessary to ensure the integrity of the remedial action. Site deed restrictions and fencing will be used to restrict access as necessary to prevent the disturbance of the capped area.
- The installation of a subsurface vertical barrier if necessary to prevent the flow of groundwater into landfilled waste.
- Ground water and surface water/sediments monitoring program to confirm that the containment and treatment of source materials is sufficiently protective of human health and the environment

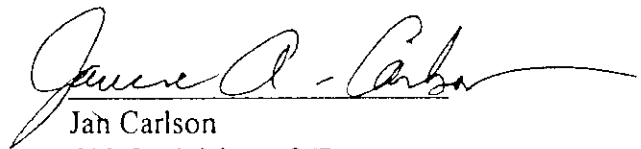
STATUTORY DETERMINATIONS AND REMEDY SELECTION STANDARDS

CERCLA statutory requirements: The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. However, because treatment of the principal threats of the Peter Kiewit Landfill was not found to be practicable, this remedy does not satisfy the statutory preference for treatment as a principle element of the remedy. The wastes that comprise the principal threat from the landfill will be contained on-site in accordance with all Applicable or Relevant and Appropriate Requirements (ARAR's).

Because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted within five (5) years after construction of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

RCRA standards for remedy selection: The selected remedy meets RCRA standards as follows: The selected remedy is protective of human health and the environment, controls the source of releases that may pose a threat to human health and the environment, and complies with applicable standards for management of wastes. This remedy will provide long-term effectiveness, will reduce the mobility of contaminants, and is implementable.

5/22/90
Date


Jan Carlson
Chief, Division of Emergency
and Remedial Response



**DECISION SUMMARY
PETER KIEWIT LANDFILL**

1 **1.0 SITE LOCATION AND DESCRIPTION**

2 The PORTS facility is located near Piketon, Ohio, in the south central portion of the state (see
3 Figure 1, *USDOE-PORTS Site Location*). The plant-site encompasses approximately 1000 acres
4 of the 4000 acre U.S. DOE reservation. The principal process at the PORTS facility is the
5 separation of uranium isotopes via gaseous diffusion. The PORTS facility has been operating
6 since 1954 enriching uranium for use in commercial nuclear reactors and for use by the U.S. Navy
7 in power reactors in the nuclear navy. Support operations include the feed and withdrawal of
8 material from the primary process, water treatment for sanitary and cooling purposes,
9 decontamination of equipment removed from the plant for maintenance or replacement, recovery
10 of uranium from various waste materials and treatment of sewage wastes and cooling water blow
11 down. The construction, operation and maintenance of this facility requires the use of a wide
12 range of commercially available chemicals. Continuous operation of this facility since 1954 has
13 resulted in the generation of inorganic, organic and low level radioactive waste materials.

14 **2.0 HISTORY OF ENFORCEMENT ACTIVITIES**

15 As a result of chemicals used to support the uranium enrichment process, and the presence of
16 uranium and technetium, waste management units at the site have contaminated soils and
17 groundwater. In 1986, the State of Ohio filed suit against U. S. DOE resulting in a Consent
18 Decree (CD) between the State of Ohio and U. S. DOE which became effective in August of
19 1989. The CD outlines the requirements for handling hazardous waste generated at the site and
20 for the investigation and clean-up of the site. U. S. EPA and U. S. DOE signed a similar
21 agreement in September of 1989. This agreement is an administrative order negotiated between
22 Region V of U. S. EPA and U. S. DOE. Both the Administrative Order on Consent (AOC) and
23 the CD require that the investigation of the site proceed according to quadrant boundaries
24 established in the agreements. A schedule is attached to each agreement that outlines when
25 documents pertaining to the investigation or corrective measures studies are to be submitted to
26 Ohio EPA and U. S. EPA (hereafter referred to as the "Agencies"). A separate schedule shall be
27 submitted to the Agencies for cleanup of the individual waste management units.

28 **3.0 COMMUNITY RELATIONS ACTIVITIES**

29 A public meeting was held at the Vern Riffe Vocational School on April 18, 1995 to discuss the
30 preferred plan for the Peter Kiewit Landfill. An information repository is located at U. S. DOE's
31 Environmental Information Center located at 505 West Emmit Avenue in Waverly, Ohio. The

32 public can also review these documents at Ohio EPA's Southeast District Office or at U. S. EPA's
33 Region V office located in Chicago.

34 Details of the investigation at the Peter Kiewit Landfill can be found in the draft RCRA Facility
35 Investigation (RFI) report located at the Information Center. The draft final Cleanup Alternatives
36 Study/Corrective Measures Study (CAS/CMS) report and the preferred plan were discussed and
37 presented at the April 18, 1995 public meeting. The public comment period on the proposed
38 remedy extended from April 11, 1995 to May 17, 1995.

39 An announcement regarding the public comment period and the availability of the documents
40 related to the clean-up at the site was published in the Waverly Watchman and in the Portsmouth
41 Times newspapers. No written or verbal requests were received to extend the public comment
42 period.

43 The public meeting, held on April 18, 1995 at the Vern Riffe Vocational School, was attended
44 by approximately 25 members of the public. Representatives from U. S. EPA, and Ohio EPA
45 answered questions regarding the preferred plan, summarized the findings of the RFI, and
46 accepted statements from members of the public. Comments, including formal statements from
47 four community members, were recorded by a court reporter. A transcript of the meeting is
48 included in the Administrative Record. A total of two written submittals were received from the
49 public during the public comment period.

50 Ohio EPA's responses to comments received during the public comment period are contained in
51 the Responsiveness Summary, which is part of this document. The public participation process
52 was designed to be consistent with the Comprehensive Environmental Compensation and Liability
53 Act (CERCLA) and therefore satisfies Sections 113(k)(2)(B)(i-v) and 117 of this law. The
54 decision for the remedial alternative is based on the administrative record. The administrative
55 record index for the response action is attached to this document in Appendix B.

56 **4.0 SCOPE AND ROLE OF THE RESPONSE ACTION**

57 For purposes of the RFI the PORTS facility has been separated into four quadrants. Each
58 quadrant roughly corresponds to a distinct groundwater flow cell within the primary water-
59 bearing unit beneath the site and has been investigated separately. Peter Kiewit Landfill is located
60 in Quadrant I (QI), and is one of twenty-one Solid Waste Management Units (SWMUs) in QI
61 currently undergoing investigation or remediation.

62 The response action at the Peter Kiewit Landfill is intended to be a long-term action designed to
63 address contamination and potential contamination caused by waste disposed at the site. The
64 remedial action will address the principal threats at the facility: contaminated soils, leachate, and
65 landfilled solid waste through treatment of the leachate and containment of wastes in order to

66 meet all Applicable or Relevant and Appropriate Requirements (ARARs). Wastes disposed of in
67 the landfill have been identified as the primary risk to groundwater, surface water, and sediments.
68 Consequently, actions to treat and/or contain contaminated soils and wastes will, in addition to
69 minimizing concerns associated with direct contact, minimize the potential for contaminants to
70 infiltrate to the groundwater or leach to surface water. When the selected remedy is completed,
71 no further remedial action at the site other than groundwater and surface water monitoring and
72 operation and maintenance (O&M) activities are envisioned. The monitoring will be conducted to
73 assure that all leachate sources are directed toward treatment and to detect any future migration
74 of chemicals to surface water or groundwater. Since hazardous substances will remain above
75 health-based levels in the capped area of the site, five-year reviews of the remedial action will be
76 necessary.

77 **5.0 SUMMARY OF RCRA FACILITY INVESTIGATION**

78 The QI RFI was conducted during 1991 and the initial RFI report submitted to Ohio EPA and
79 U.S. EPA on February 19, 1992. Phase II of the investigation was conducted between October
80 1993 to January 1994. The Phase II RFI report was submitted to the Ohio EPA and U.S. EPA on
81 June 20, 1994.

82 The Peter Kiewit Landfill is located in the central portion of QI, just west of Big Run Creek
83 (BRC) and approximately 200 feet east of the XT-847 GCEP construction warehouse (see Figure
84 2, *USDOE-PORTS Site Map*). The Peter Kiewit Landfill was used from approximately 1953 until
85 1968. During plant construction, the landfill was used as a salvage yard, burn pit and trash
86 disposal area. After plant construction, the landfill was used as a sanitary landfill. It is probable
87 that solid wastes now known to be potentially hazardous were landfilled at this site.

88 Because a permit was not required at the time of landfill operation, the exact boundaries of the
89 filled area and the exact nature of all of the wastes disposed at the Peter Kiewit Landfill are not
90 known (see Figure 3, *Approximate Landfill Boundaries*, for approximate landfill boundaries
91 based on the current topography of the Peter Kiewit area). An estimate of the western boundary
92 location cannot be made due to the presence of the XT-847 building. Borings and monitoring
93 wells west of XT-847 such as the PK-08G and PK-09G wells did not encounter waste during
94 installation. However, it is possible that the southern half of the XT-847
95 warehouse was built over a portion of the Peter Kiewit Landfill. Together, the Peter Kiewit
96 Landfill and the XT-847 building cover approximately 23.5 acres.

97 During the QI RFI (DOE 1994), several intermittent seeps located near the base of the landfilled
98 material were discovered along the eastern edge of the landfill. Sampling during and after the RFI
99 field work has indicated the presence of contaminants in the seep discharge and associated seep
100 sediments.

101 **5.1 Nature and Extent of Contamination**

102 As done with all four quadrants, the investigation of Quadrant I which includes the Peter Kiewit
103 Landfill consisted of Phase I and Phase II investigations. The Phase I investigation consisted of
104 the installation of 11 monitoring wells, 2 sediment samples near Big Run Creek and 2 samples of
105 leachate from the Peter Kiewit Landfill. The leachate samples were analyzed for over 200 volatile
106 organic chemicals (VOCs) and also radiological analyses including uranium and Technetium-99,
107 both previously detected radioactive materials at PORTS. The two sediment samples were
108 analyzed for over 30 VOCs, over 20 metals, radiological analyses and also for freon and fluoride,
109 both used on the plant site. The 11 monitoring wells were installed around the Peter Kiewit
110 Landfill with 9 being drilled in the Gallia sand and gravel layer and 2 in the underlying Berea
111 sandstone. A random soil sample was taken from each well and ground water was sampled from
112 each well for VOCs and radiologicals.

113 During the Phase II investigation, eight hand auger soil samples were collected along the east side
114 of the Peter Kiewit Landfill to provide better definition in this area. The results of the Phase I and
115 Phase II investigations revealed that VOCs and Aroclor-1260 (PCB) were detected in surface
116 water from the seeps located on the east side of the landfill. Gross alpha and gross beta
117 radioactivity above preliminary background levels were also detected in these seep samples. The
118 sediment samples taken in the area of the seeps showed levels of semi-volatile organic chemicals
119 (SVOCs) and VOCs.

120 VOCs were detected in ground water at 4 wells. One well, PK-03B, showed 70 parts per billion
121 of trichloroethylene (TCE) in one sample but the duplicate was non-detect. This well will be
122 resampled to resolve this discrepancy. Due to the location of the well and the direction of
123 groundwater flow, the volatile organics detected are likely associated with the X-749/X-120
124 landfill ground water plume located southwest of Peter Kiewit. Migration of volatile organics
125 from the X-749 area in an easterly direction toward Big Run Creek has been documented from
126 past groundwater sampling.

127 Soil samples collected along the east side of the landfill revealed low levels of VOCs, SVOCs and
128 elevated levels of PCBs (Aroclor-1260) in three samples. Sediment samples collected in the seep
129 drainage disclosed numerous semi-volatile compounds, and low levels of radiologicals. All
130 investigation samples are detailed in the revised Draft RFI. An interim action was completed in
131 late 1994 to re-route the creek away from the landfill and collect and treat leachate from seeps
132 located along the eastern side of the landfill.

133 **6.0 SUMMARY OF RISK ASSESSMENT**

134 The assessment of potential or current risks from wastes present at a SWMU such as the Peter
135 Kiewit Landfill is based on guidance provided by the U. S. EPA, in particular the "Risk
136 Assessment Guidance for Superfund" (RAGS), (U.S. EPA, 1989a) and Guidelines for Exposure
137 Assessment (U.S. EPA, 1992a). These guidance documents are founded on well established
138 chemical risk assessment principles developed for the regulation of environmental contaminants.
139 The risk assessment for contaminated sites on the DOE-PORTS site consists of a human health
140 risk assessment and an ecological risk assessment. The human health risk assessment is
141 conducted assuming that no institutional controls such as fencing are in place and that residential
142 use is possible. A future residential scenario at a SWMU is considered the reasonable maximum
143 exposure (RME) for risk assessment purposes. The initial risk assessment conducted for the site
144 assumes that no future cleanup action is taken and is referred to as the baseline risk assessment
145 (BRA). The baseline risk assessment consists of the following steps:

146 **6.1 Identification of Chemicals of Concern**

147 After data collected during the RCRA facility investigation (RFI) is evaluated, those chemicals
148 that were detected during lab analysis were retained as Chemicals of Concern (COC). Some data
149 not appropriate for certain exposure pathways was excluded. For example, deep soil data greater
150 than 10 feet would not be expected to be available for possible ingestion by children or adults and
151 is only a threat to ground water contamination. Therefore, this data was not included in the
152 assessment of soil ingestion risks.

153 **6.2 Exposure Assessment**

154 This step involves the evaluation of potential human exposures to site chemicals. There are
155 basically four separate tasks necessary in the exposure assessment. These steps are: (a)
156 characterization of the exposure setting; (b) identification of exposure pathways; (c) estimation
157 of environmental concentrations; and (d) estimation of human intake.

158 **6.2.1 Characterization of the Exposure Setting**

159 This step involves modeling or simulating those exposure scenarios considered possible on the site
160 both for current use and future use. The following scenarios were included in the baseline risk
161 assessment:

162 **6.2.1.1 Current Use Scenarios**

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- on-site worker

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- off-site worker

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- off-site recreational population

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The on-site worker scenario describes potential exposures to outdoor media at PORTS for a worker engaged in normal day-to-day activities throughout the quadrant. Because contaminated areas on the site did not extend to off-site locations, an assessment of current-use, off-site residential scenarios was not conducted. Current-use off-site residential risk estimates for air inhalation pathways will be assessed upon completion of the Air RFI work. The recreational population scenario was developed to assess potential exposures to surface water bodies on the PORTS reservation and to fish and game eaten by local recreational anglers and hunters. In estimating exposure for both current off-site resident and recreational populations, any significant direct access to media within the quadrant being evaluated was considered unlikely. Exposures were assumed to result from contaminants that could potentially migrate off-site.

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Future use scenarios were developed consistent with the reasonable maximum exposure assumption of unrestricted access to the site. Specifically, on-site residential development and an on-site recreational population were assumed as potential exposure scenarios. For the future use conditions, the following scenarios were developed:

183 **6.2.1.2 Future Use Scenarios**

184

- On-site resident

185

- On-site recreational population

186

- On-site worker

187

- Off-site resident

188

- Off-site recreational population.

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191

192

In addition to the on-site worker who is involved in normal day-to-day activities, another exposure scenario modeled under both current and future land use conditions is the excavation worker. This worker is assumed to be in contact with contaminated media during periodic, intrusive activities such as construction or landscaping.

193 **6.2.2 Identification of Human Exposure Pathways**

194

195

The above exposure scenarios were developed to model or simulate possible exposure situations found at the site. It is also necessary to determine the most likely exposure pathways as well. An

196 example of an exposure pathway is the ingestion of contaminated groundwater under both
197 current and future site use. The following exposure pathways were evaluated:

- 198 ● Exposure to groundwater via ingestion of drinking water, and dermal
199 contact and inhalation of volatiles while showering;
- 200 ● Exposure to soil via incidental ingestion and dermal contact,
201 and via external gamma radiation from radionuclides
202 present in soil;
- 203 ● Exposure to sediment via incidental ingestion and dermal contact;
- 204 ● Exposure to surface water via incidental ingestion and dermal
205 contact;
- 206 ● Exposure to air via inhalation of vapors and particulates;
- 207 ● Exposure to vegetables grown and to beef and milk from cattle
208 pastured on contaminated land;
- 209 ● Exposure via ingestion of local game contaminated by grazing on land
210 affected by plant operations;
- 211 ● Exposure via ingestion of fish.

212 6.2.3 Estimation of Environmental Concentrations

213 In this step, concentrations of chemicals and radionuclides in various environmental media from
214 which exposure may occur are estimated via sampling results and mathematical modeling.

215 6.2.4 Estimation of Human Intake

216 This step involves calculating the amount of a substance received by an individual through
217 exposure to chemicals and radionuclides in the various environmental media. Chemical intakes
218 (referred to as chronic daily intakes or CDIs) are typically expressed in terms of the amount of
219 material in contact with the body for a certain time period, and are calculated as a function of
220 chemical concentration in the soil or water, how often the exposure occurs and how long
221 (exposure frequency), body weight, and the portion of a lifetime that exposure occurs.

The generic equation for calculating the CDI is as follows:

$$CDI = \frac{C \times CR \times EF \times ED}{BW \times AT}$$

where:

CDI	=	Chronic daily intake, mg/kg/day
C	=	Chemical concentration in soil or water, e.g. mg/kg soil
CR	=	Contact rate, e.g., kg/soil/day
EF	=	Exposure frequency, days/year
BW	=	Body weight, kg
AT	=	Averaging time; portion of life time over which exposure is averaged (days).

Variations of this equation are used when calculating air inhalation and radiological exposures.

6.3 Toxicological Assessment

The toxicological assessment involves the identification of adverse health effects associated with exposure to a chemical or radionuclide and the relationship between the extent of exposure and the likelihood and/or severity of adverse effects. The U.S. EPA has conducted such assessments on many frequently occurring environmental chemicals and radionuclides and has developed toxicity values based on these assessments for use in risk assessments. Further information regarding the toxicological assessment can be found in the draft RFI Reports.

6.4 Risk Characterization

This step involves calculating estimates of carcinogenic (cancer causing) and non-carcinogenic risks from chemicals of concern for different exposure pathways. Cancer risk is defined as the probability of an individual developing cancer over a lifetime as a result of exposure to a potential carcinogen in addition to the probability of cancer risks from all other causes. As a benchmark in developing clean-up goals at contaminated sites, an acceptable range of excess lifetime cancer risk (ELCR) from one in one million (1×10^{-6}) to one in ten thousand (1×10^{-4}) has been established. The point of departure or program goal for risk remaining after a site is cleaned up is 1×10^{-6} (i.e. a one in one million excess lifetime cancer risk, above and beyond risks from other unrelated causes) and is the risk goal for the U. S. DOE-PORTS site.

The "Hazard Quotient" (HQ) is used to determine the severity of non-cancerous hazards posed at a site. The HQ is determined by dividing the Chronic daily intake (CDI) by the Reference dose (RfD). The reference dose is the amount of material that is determined to cause a toxic effect. If

257 the HQ is less than or equal to 1, then the estimated exposure to a substance represented by the
258 CDI, is judged to be below the threshold that could result in a toxic effect. An HQ greater than
259 1, indicates that a toxic effect may result. To assess the cumulative effect of similar noncancerous
260 substances, the HQ for all of the substances being assessed at a site are added, with the result
261 being the hazard index (HI).

262 6.5 Conclusions

263 The risks estimated for substances evaluated at a solid waste management unit (SWMU) and in
264 the quadrant, are compared to target risk levels and general conclusions regarding the potential
265 risks associated with these substances are discussed in the baseline risk assessment.

266 6.6 Peter Kiewit (SWMU Specific) Risk Assessment

267 The SWMU specific risk assessment for the Peter Kiewit Landfill was completed using the above
268 described principles. By using the SWMU specific data gathered during the RFI, it is possible to
269 estimate risks associated with the landfill. The risk estimates for the scenarios assessed at the
270 Peter Kiewit Landfill are summarized below in Table 1 and are the estimated risks assuming no
271 clean-up action is taken at the site. Other risk estimates presented in the CAS/CMS report are for
272 risks to construction workers during implementation of the clean-up alternative and for risk
273 estimates after clean-up is complete. Table 1 shows that conservative estimates of future
274 residential use of the area around (i.e. next to) the landfill and worker scenarios show
275 unacceptable risk (i.e. HI > 1 and a cancer risk greater than 10^{-4}) if no clean-up actions are taken.
276 The future on-site residential scenario is considered to represent the reasonable maximum
277 exposure (RME) risk estimate for the Peter Kiewit landfill area.

TABLE 1¹

Summary of Risks Associated with the Peter Kiewit Landfill		
Exposure Scenario	Noncancer Hazard Index (HI)	Cancer Risk (Excess Lifetime Cancer Risk-ELCR)
Current Use: On-site Worker	Total HI = 7×10^{-2}	Total excess cancer risk = 1×10^{-5} .
Future Use: On-site Resident (next to the landfill)	Total HI = 50	Total excess cancer risk > 10^{-2}
On-site Recreational Population: Seep and sediment assessment ²	Total HI = 9×10^{-1}	Total excess cancer risk = 2×10^{-4}
Future Use: On-site Worker	Total HI = 20	Total excess cancer risk = 2×10^{-3}
Excavation Worker	Total HI = 30	Total excess cancer risk = 1×10^{-4}
On-site Worker: Seep and sediment assessment ²	Total HI = 7×10^{-1}	Total excess cancer risk = 1×10^{-4}

¹ From the Quadrant I Baseline Risk Assessment, RFI Report, U.S. DOE, 1994

² Seep and Sediment Assessment: Risks associated with exposure to seep and sediment only. This scenario assumes the seep collection system is not in operation.

290 **6.7 Ecological Risk Assessment**

291 The purpose of the ecological risk assessment was to estimate the potential and future risks of
292 Peter Kiewit Landfill contaminants to ecological receptors. The primary source of potential
293 ecological risks was determined to be the seeps located along the eastern side of the landfill. In
294 1994, an interim action was completed to re-route Big Run Creek away from the landfill and
295 collect and treat leachate from the seeps. Following the completion of the interim action,
296 potential ecological exposure to landfill wastes has been minimized. The selected remedy will
297 appropriately address landfill wastes which have potential to cause future ecological harm.

298 **7.0 DESCRIPTION OF ALTERNATIVES**

299 The CAS/CMS was conducted to identify and screen technologies and cleanup alternatives for
300 addressing the Peter Kiewit Landfill. The seep collection system installed on the east side of Big
301 Run Creek is expected to collect contaminants released from the landfill. Under a true no action
302 scenario, continued treatment of seeps would not occur, posing continued unacceptable risk, as
303 demonstrated in the baseline risk assessment. The "No Further Action" scenario presented below
304 assumes that the seep collection system will remain in operation.

305 Four alternatives were evaluated in detail in the CAS/CMS Report. The alternatives were
306 compared based on the overall effectiveness in addressing the current and future site conditions.
307 These alternatives were as follows:

- 308 ● **No Further Action (seep collection system would remain in operation)**
- 309 ● **Limited Action - Fencing/Signs, Deed Restrictions and Environmental**
310 **Monitoring**
- 311 ● **Capping, Vertical Subsurface Barriers, Deed Restrictions and**
312 **Environmental Monitoring**
- 313 ● **Vertical Subsurface Barriers, Deed Restrictions and Environmental**
314 **Monitoring**

315 These alternatives are summarized below:

316 **7.1 Alternative #1: No Further Action**

317 Under this alternative, the seep collection system (and treatment) would remain in operation but
318 PORTS enrichment plant processes are assumed to be shut down and no additional actions would
319 be taken at the landfill. The No Further Action alternative assumes unrestricted access to the
320 landfill area and no restrictions on land use. There would be no additional active measures taken
321 to reduce the concentration levels or mobility of the contaminants in the seeps.

322 Cost Analysis-Alt. #1: No Further Action Alternative

323 There are no costs associated with this alternative in addition to the seep collection system and its
324 operation. The total present worth cost of the seep collection system is \$2,995,000.

325 **7.2 Alternative #2: Limited Action - Fencing/Signs, Deed Restrictions and**
326 **Environmental Monitoring**

327 This Limited Action alternative includes installing a security fence around the perimeter of the
328 Peter Kiewit Landfill. Signs prohibiting entry would be prominently placed upon the fence. Deed
329 restrictions would be applied to this area to restrict digging, drilling, building, or any other activity
330 that can disturb soils, and to prevent installation of drinking water wells in the contaminated area.
331 Environmental monitoring of the ground water and surface water near the area would occur semi-
332 annually. An annual report would be prepared summarizing all field activities and analytical data.
333 Evaluation of the environmental monitoring program would be conducted every five years to
334 determine the need for remediation and/or continued monitoring. In addition, the interim action
335 would be continued for seep collection and treatment.

336 Since the Limited Action Alternative primarily uses institutional controls such as fencing and no
337 active source treatment, it does not comply with the National Contingency Plan (NCP)
338 requirements (40 CFR 300.430) which state that institutional controls shall not substitute for
339 active response measures as the sole remedy unless active response measures are determined not
340 to be practicable. Alternative #2 is retained only to provide a remedial option that may be
341 selected if other alternatives involving active source treatment prove impracticable.

342 Cost Analysis-Alternative #2: Fencing/Signs, Deed Restrictions, Environmental Monitoring

343 The total present worth cost for this alternative is \$6,052,000.

344 **7.3 Alternative #3: Capping, Continuation of Seep Collection System, Deed**
345 **Restrictions, Environmental Monitoring, and Vertical Subsurface**
346 **Barriers (contingency)**

347 This alternative would be designed to include the relevant components of U.S. EPA's presumptive
348 remedy guidance for landfills, which specifies containment technologies to isolate the
349 contaminated seeps and wastes present in the landfill, and reduce the water source of the seeps.
350 Infiltration would be reduced by the construction of a cap over the landfill which would extend
351 over the previous course of Big Run Creek (the stream channel prior to installation of the seep
352 collection system).

353 If necessary to prevent the flow of groundwater into the landfilled wastes, vertical subsurface
354 barriers would be installed on the northern and western edges of the landfill (see discussion of
355 subsurface barriers below). The primary source of seep water is believed to be from infiltration of
356 rain water from the landfill surface and not from ground water flowing into the waste. Therefore,
357 the installation of the vertical subsurface barriers is included in this alternative as a contingency.
358 Determination of the need for the vertical subsurface barriers would be made during the first five
359 year review of the remedial action, using criteria developed during the remedial design.

360 Seep collection and treatment would be accomplished using the seep collection system (SCS).
361 Two options each for capping and vertical subsurface barriers were considered under this
362 alternative and are described below. Deed restrictions would be enacted to prevent any activities
363 that could damage the integrity of the cap.

364 7.3.1 Capping Options

365 7.3.1.1 Hazardous Waste Disposal Facilities Final Cover (RCRA Subtitle C 366 Multimedia Cap).

367 This option involves constructing a multimedia cap over the landfill per RCRA Subtitle C
368 requirements (U.S. EPA 1991). The multimedia cap would consist of a low permeability
369 geomembrane/soil layer, a drainage layer, and a top vegetative/soil layer. In addition, the design
370 would consist of vents for landfill gas collection and perimeter drains for capturing drainage
371 through the drainage layer.

372 It is possible that the landfill material may be unstable and pose cap implementation problems,
373 such as settling due to the use of heavy machinery causing differential settlement of the cap. If the
374 landfill material is determined to be unstable for cap installation, measures for providing a solid
375 foundation for the cap or other actions for stabilizing the landfill may be required. The existing
376 landfill material can be compacted by heavy equipment traffic or by dynamic compaction. A
377 foundation consisting of a 3-foot layer of stone overlain by a 3-foot layer of below-cap fill is
378 another possible option for providing stability. The decision of the cap stability requirement and
379 the measures to be taken for stabilizing the cap would be determined in the detailed design phase.

380 The cap would be sloped to force the runoff of any precipitation away from the landfill area.
381 Monitoring would include regular visual inspections to ensure the integrity of the cap and leachate
382 collection system. Noted defects in the cap will be repaired as needed.

383 Cost Analysis-Alternative #3: Hazardous Waste Cap Option

384 The total capital cost for this alternative is \$17,267,000. Operation and Maintenance costs are
385 estimated to be, Year 1: \$294,000; Years 2-30: \$9,925,000; The total present worth cost in
386 1994 dollars is \$21,503,000.

387 **7.3.1.2 Municipal Solid Waste Landfills Final Cover (RCRA Subtitle D**
388 **Multimedia Cap)**

389 This option involves constructing a multimedia cap over the landfill per RCRA Subtitle D
390 requirements for the final closure of a municipal/sanitary landfill facility (U.S. EPA 1991). This
391 option would also address the applicable, relevant, and appropriate requirements for closure of a
392 solid waste facility per Ohio regulations. The multimedia cap would consist of a compacted soil
393 barrier layer, a granular drainage layer, and a top vegetative layer. The slope of the cover may
394 vary from 5 percent to 25 percent or any other slope justified by adequate slope-stability analysis.

395 The discussion on cap stability requirement is the same as that described for the Subtitle C cap.
396 The cap would be sloped to force the runoff of any precipitation away from the landfill area.
397 Monitoring would include regular visual inspections to ensure the integrity of the cap and leachate
398 collection system. Noted defects in the cap will be repaired as needed.

399 Cost Analysis-Alt. #3: Solid Waste Cap Option

400 The solid waste cap costs are identical to the above costs with the exception of no added costs for
401 the synthetic liner material. Therefore, this alternative's net worth is approximately \$20,877,000.

402 **7.3.2 Vertical Subsurface Barrier Options**

403 **7.3.2.1 Slurry Walls**

404 Conventional slurry wall technology involves excavation of trenches followed by backfilling with
405 soil bentonite slurry. However, recently developed techniques, which use simultaneous soil
406 mixing and injection of soil-bentonite slurry, can be used for construction of slurry walls. The
407 principal advantage of these techniques is the minimization of the volume of soil to be excavated.
408 In this alternative, slurry walls would be constructed on the northern and western edges of the
409 landfill. This technique utilizes a drill rig with multi-shaft augers and mixing paddles to drill into
410 the soil. During the drilling operation a fluid slurry is injected and mixed with the soil to form a
411 low permeability column. These columns are then overlapped to form a continuous barrier to
412 ground water flow.

413 The slurry wall would extend from the ground surface into the impervious Sunbury shale layer,
414 located at a depth of approximately 30 ft. in the landfill area. The slurry wall would divert ground
415 water around the landfill and is intended to prevent horizontal ground water flow into the waste.
416 Soils removed during construction of the slurry wall would be tested and disposed according to
417 these test results.

418 **7.3.2.2 Sheet Piling**

419 This option involves driving steel sheets into the ground to form an interconnecting, thin, low-
420 permeability barrier to ground water movement into the landfill area. The joints of steel sheet
421 piles would be sealed by a bituminous sealant to further reduce permeability. The sheet piles
422 would extend from the ground surface into the impervious Sunbury shale layer, located at a depth
423 of approximately 30 ft. in the landfill area.

424 Cost Analysis-Vertical Subsurface Barrier Options

425 Costs associated with the Vertical Subsurface Barriers were included in the cost analyses for
426 Alternative #3. The cost difference between the two subsurface barrier options is not expected to
427 substantially affect the total cost of Alternative #3.

428 **7.4 Alternative #4: Vertical Subsurface Barriers, Continuation of Seep** 429 **Collection System, Deed Restrictions, and Environmental Monitoring**

430 This alternative would continue to allow precipitation to infiltrate into the landfill to allow for
431 natural biodegradation of organic contaminants in the landfill. Some organic compounds such as
432 PCB's do not readily biodegrade. Biodegradation could be enhanced by spraying inorganic
433 nutrients over the landfill surface. Leachate from the landfill is collected and either recirculated
434 for re-infiltration into the landfill or treated prior to discharge. This alternative is similar to
435 Alternative #3 except that landfill capping is not included. Vertical subsurface barriers would be
436 placed upgradient of the landfill to minimize ground water movement into the landfill and
437 minimize contamination of ground water moving into and away from the landfill. The options for
438 vertical subsurface barriers are described in Alternative #3. The seep collection system would be
439 continued for seep collection and treatment. Deed restrictions would be placed on the landfill
440 area to prevent access to the landfill and to prevent any activities that may damage the integrity of
441 the cap.

442 Cost Analysis-Alt. #4: Vertical Subsurface Barrier

443 The total capital cost for this alternative is \$4,909,000. O&M costs are estimated to be, Year 1:
444 \$283,000; Years 2-30: \$9,876,000; The total present worth cost is \$10,420,000.

445 **8.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES**

446 In selecting the remedial alternative, Ohio EPA and U.S. EPA considered the following eight
447 criteria.

- 448 1. **Overall protection of human health and the environment** addresses whether or
449 not a remedy provides adequate protection, and describes how risks are eliminated,
450 reduced or controlled through treatment, engineering controls, and/or institutional
451 controls.
- 452 2. **Compliance with all State, Federal and local laws and regulations** addresses
453 whether or not a remedy will meet all of the relevant, appropriate and applicable
454 State, Federal, and Local environmental statutes.
- 455 3. **Long-term effectiveness and permanence** refers to the ability of a remedy to
456 maintain reliable protection of human health and the environment over time once
457 clean-up goals have been met.
- 458 4. **Reduction of toxicity, mobility, or volume** is the anticipated performance of the
459 treatment technologies to yield a permanent solution. This includes the ability of
460 the selected alternative to reduce the toxic characteristics of the chemicals of
461 concern or remove the quantities of those chemicals to an acceptable risk
462 concentration or regulatory limit and/or decrease the ability of the contaminants to
463 migrate through the environment.
- 464 5. **Short-term effectiveness** involves the period of time needed to achieve protection
465 and any adverse impacts on human health and the environment that may be posed
466 during the construction and implementation period until clean-up goals are
467 achieved.
- 468 6. **Implementability** is the technical and administrative feasibility of a remedy,
469 including the availability of goods and services needed to implement the chosen
470 solution.
- 471 7. **Cost** includes capital and operation and maintenance costs.
- 472 8. **Community acceptance** was assessed in the Responsiveness Summary of this
473 document. Public comments were received on the RFI report, the CAS/CMS, and
474 the Preferred Plan.

475 The eight criteria are categorized into three groups: threshold criteria, primary balancing criteria,
476 and modifying criteria. The first two criteria, overall protection of human health and the
477 environment and compliance with ARARs, are the threshold criteria that must be satisfied in order
478 for an alternative to be eligible for selection as the preferred remedial alternative. Criteria three
479 through seven are the primary balancing criteria that are used to weigh major trade-offs among
480 alternatives. Community acceptance is the modifying criterion that is taken into account after
481 public comment is received on the Preferred Plan. Ohio EPA and U. S. EPA evaluated each
482 alternative using the above eight criteria. The following discussion summarizes the compliance of
483 the alternatives with these criteria.

484 **8.1 Overall Protection of Human Health and the Environment**

485 Alternatives #1 and #2 do not provide overall protection of human health and the environment
486 due to the long-term risks associated with potential formation of additional seeps along the
487 southern edge of the landfill, and possible exposure to uncovered waste due to eventual erosion of
488 the current cover material. Alternatives #3 and #4 were determined to provide overall
489 protectiveness.

490 Alternative #3 (cap, seep collection, vertical upgradient barrier) is expected to be the most
491 protective of both human health and the environment because the most effective activities will be
492 conducted to alleviate infiltration of surface water into the waste, seep water volume, and, if
493 necessary, migration of groundwater as compared to the other alternatives. In addition to this,
494 the cap is expected to provide more protection against possible exposure to uncovered waste due
495 to eventual erosion of the current cover material than will Alternative #4 (no cap, seep collection,
496 vertical barrier) or Alternative #2 (Seep Collection, Fencing/Signs, Deed Restrictions).
497 Alternative #1 was considered the least protective because a greater probability of additional
498 seeps and eventual erosion of the current soil cover is anticipated as compared to the other
499 alternatives. The potential for erosion of the current soil cover is equal for Alternatives #1, #2,
500 and #4, however, Alternative #4 poses a lesser risk for additional leachate from seeps over
501 Alternative #1 because some reduction in groundwater flow into the landfill is expected with a
502 vertical barrier.

503 **8.2 Compliance with all State, Federal and Local Laws and Regulations**

504 Selected remedial actions on the U. S. DOE site must comply with applicable Federal, State, and
505 Local laws and regulations. Examples of applicable laws and regulations include, but are not
506 limited to, the Clean Air Act, Toxic Substances Control Act, the Safe Drinking Water Act, the
507 Clean Water Act, the Resource Conservation and Recovery Act, Ohio Revised Code (ORC)
508 6111, ORC 3734, and Ohio Administrative Code 3745. CERCLA Section 121 requires that
509 remedial actions meet legally applicable or relevant and appropriate requirements of other
510 environmental laws. "Applicable requirements" means those cleanup standards of control, and

511 other substantive environmental protection requirements, criteria, or limitations promulgated
512 under Federal or State law that specifically address a hazardous substance, pollutant, contaminant,
513 remedial action, location, or other circumstance at a site.

514 "Relevant and appropriate" requirements are cleanup standards, standards of control, and other
515 substantive environmental protection requirements, criteria or limitations promulgated under
516 Federal or State law that, while not legally "applicable" to a hazardous substance, pollutant,
517 remedial action or circumstance at a site, their use and application is well suited to the situation at
518 a site. An example of a situation where a law would be relevant and appropriate is the treatment
519 of waste not lawfully deemed "hazardous" but identical to chemicals currently deemed hazardous
520 under the Resource Conservation and Recovery Act (RCRA). A list of Ohio's ARAR's is
521 provided in Appendix C.

522 In certain instances, a remedy may be selected which does not meet an ARAR. Six conditions
523 have been established under which an ARAR may be waived: interim measure, greater risk to
524 health and the environment, technical impracticability, equivalent standard of performance,
525 inconsistent application of state requirements, and fund-balancing. No waiver of an ARAR has
526 been sought by U.S. DOE with respect to the Peter Kiewit Landfill.

527 ARAR's are divided into three different categories:

- 528 ● **Chemical-Specific ARARs**
- 529 ● **Action-Specific ARARs**
- 530 ● **Location-Specific ARARs**

531 **Chemical-Specific ARARs** are health or risk-based numerical values which establish the
532 acceptable amount or concentration of a chemical that may be found in the environment. An
533 example of chemical-specific requirements are maximum contaminant levels (MCLs) established
534 for certain chemicals. All of the alternatives evaluated for the Peter Kiewit Landfill are expected
535 to comply with chemical-specific ARARs because discharge levels for treated seep water are
536 identical in each alternative. Only if operation of the seep collection system is halted (a true "No
537 Action alternative") would there be potential violations in discharge limits for treated seep water.

538 **Action-Specific ARARs** are usually technology or activity based requirements or limitations on
539 actions taken with respect to hazardous waste. An example of an action-specific requirement
540 would be the requirement for treatment of hazardous waste to approved standards before it is land
541 disposed. Alternative #3 complies with action-specific ARARs, however, the remaining
542 alternatives do not. A "relevant and appropriate" requirement for landfills is the placement of a
543 cap on the landfill after it is no longer in operation. Because they do not evaluate placement of a
544 cap on the Peter Kiewit Landfill, Alternatives #1, #2, and #4 do not satisfy Action-specific
545 ARARs. Additionally, the National Contingency Plan states that a preference shall be given to

546 alternatives that actively treat waste rather than institutional controls (Alternative #2).

547 **Location-Specific ARARs** are restrictions placed on the concentration of hazardous substances
548 or the conduct of activities solely because they occur in a specific location. An example of
549 location-specific requirements are laws forbidding the placement of an incinerator near a hospital
550 or school or the placement of waste in a wetland area. All of the alternatives will comply with
551 these requirements because no waste disposal outside of the landfill is proposed.

552 According to Section 121 of CERCLA, no federal, state or local permits are required for remedial
553 actions taken on-site.

554 **8.3 Long-term Effectiveness and Permanence**

555 Alternative #3 is expected to provide the greatest long-term protectiveness over the other
556 alternatives because capping the landfill will reduce infiltration of water into the waste and the
557 additional contingency measure of up-gradient groundwater control would also be expected to
558 reduce horizontal groundwater flow. An alternative which would remove and treat the landfill
559 waste would have the greatest level of long-term effectiveness. However, due to the large cost
560 and risks of addressing unknown landfill waste and the high cost of off-site disposal, such an
561 alternative was found impracticable and was not considered in the detailed analysis of alternatives.
562 Alternatives #1, #2 and #4 are anticipated to have a lesser degree of permanence because eventual
563 failure of the current soil cover which could expose wastes and additional seep generation is more
564 likely to occur without further control of rainwater infiltration into the waste. Alternative #4 was
565 judged to be more protective than Alternative #1 and #2 because a vertical barrier to stop the
566 migration of groundwater will reduce the likelihood of future seep generation.

567 **8.4 Reduction of Toxicity, Mobility, or Volume Through Treatment**

568 None of the alternatives reduce the toxicity, mobility or volume of landfill wastes through
569 treatment. No hot spots were located at the Peter Kiewit Landfill; therefore, treatment of hot
570 spots was not considered. Treatment of the homogenous waste within the landfill was not found
571 to be practicable.

572 **8.5 Short-Term Effectiveness**

573 Alternatives #1 and #2 do not require soil excavation and are therefore not expected to cause
574 short-term risk from exposure to landfilled wastes. Alternative #3 is expected to slightly increase
575 ecological risks during cap construction due to soil run-off into Big Run Creek. Alternative #4 is
576 expected to have the greatest short-term risk because unknowns during construction of the
577 vertical barrier could cause exposures from buried wastes. In the westerly direction from the
578 landfill (where the vertical barrier would be installed), the extent of buried waste is not known,

579 increasing the possibility of excavating wastes during construction. Contingency measures to
580 address these concerns would be addressed during remedial design.

581 Since the seep collection system is already in place, Alternative #1 would be completed
582 immediately. Alternative #2 could be completed in less than six months; Alternative #4 in
583 approximately six months; and Alternative #3 in six months to one year.

584 **8.6 Implementability**

585 All of the alternatives are expected to be technically implementable. Alternatives #3 and #4 would
586 be expected to present greater difficulties than alternatives #1 and #2 due to the proposed cap
587 construction (Alt. #3) and potential vertical barrier work (Alt. #4). Alternatives #1 and #2
588 would be the easiest to implement because fence construction in alternative #2 is the only
589 construction activity necessary. No construction activities are planned in alternative #1 beyond
590 the seep collection system which is already in place and operating.

591 **8.7 Cost**

592 The "No Further Action" alternative would not require additional costs beyond the installation
593 costs already expended for the seep collection system and is the least costly alternative. However,
594 additional costs may be necessary in the future for addressing additional seeps or failure of the
595 current soil cover. Alternative #2 is more costly than alternative #1, followed by alternative #4
596 and alternative #3, which is estimated to be the most expensive due to the greatest amount of
597 field work. Alternative #4 is substantially less costly than alternative #3 because of the absence
598 of capping construction costs. Recent experience with construction work at the PORTS plant
599 has shown that contractor bids for remedial work are often times lower than estimated in the
600 corrective measures studies.

602 **9.0 THE SELECTED REMEDY**

603 **Ohio EPA selects a modified version of Alternative #3.** This alternative continues the
604 operation of the seep collection system, requires the landfill to be capped with a solid waste type
605 cap meeting Subtitle D requirements, and stipulates the installation of a subsurface vertical barrier
606 if monitoring shows that a barrier is needed to prevent the flow of groundwater into landfilled
607 waste (see Figure 4, *Schematic of Alternative 3*, for a sketch of alternative components). This
608 alternative provides the best balance of trade-offs when considering the criteria used to evaluate
609 remedies presented in the preferred plan and in Section 8.0 above. The Agency also believes that
610 this remedy will be protective of human health and the environment by containing and where
611 practicable, treating the waste (leachate sources). This alternative meets ARAR's (see Appendix
612 C), is cost-effective, and will provide long-term effectiveness.

613 The major components of this alternative are:

614 ● Continuation of the seep collection system which is currently in operation on the
615 east side of the landfill;

616 ● Capping the landfill to contain wastes and reduce water infiltration with a cap
617 meeting the requirements of RCRA, Subtitle D;

618 ● The use of vertical barriers (slurry wall) as necessary to minimize lateral migration
619 of contaminants. Future evaluation of the leachate volumes flowing to the seep
620 collection system will determine the need for a vertical subsurface barrier. The
621 criteria for determining the need for the vertical subsurface barrier shall be
622 developed during the remedial design. Specific details shall be included in all
623 subsequent design documents.

624 ● Environmental monitoring to ensure that the final remedial action is protective.

625 The recompacted low permeability cap is the preferred cap design. This cap, commonly referred
626 to as a solid waste cap, has been used at two other locations on the site and is expected to contain
627 landfilled wastes and minimize the infiltration of rain water into the landfill.

628 A landfill operated today similar to the Peter Kiewit Landfill would be required to be capped per
629 solid waste regulations after operations ceased. Although the Peter Kiewit Landfill ceased
630 operation before these State and Federal laws were enacted, capping the landfill is a relevant and
631 appropriate requirement and will comply with Federal and State law. Alternative #1 (No Further
632 Action), Alternative #2 (Fencing and Deed Restrictions), and Alternative #4 (Vertical Subsurface
633 Barrier) do not meet Relevant and Appropriate Requirements.

634 If deemed necessary, the preferred alternative would require the installation of a slurry wall to
635 prevent the horizontal flow of groundwater into the landfill. However, based on past data
636 showing that the Minford clays have a relatively low horizontal permeability, Ohio EPA believes
637 that the primary source of seep water is from infiltration of rain water from the landfill surface and
638 not from ground water flowing into the waste. The effectiveness of the landfill cap in reducing
639 seep water volume, and the continued ability of the seep collection system will determine the need
640 for the installation of a slurry wall. Specific criteria developed during the remedial design will be
641 examined during the first five year review of the remedy to determine the need for the slurry wall.
642 If a slurry wall is deemed necessary to reduce lateral migration of contaminants, its placement and
643 design will consider the existing structures and utilities west of the landfill area.

644 Excavation and subsequent disposal of the material in the Peter Kiewit Landfill was considered;
645 however, it was determined that this alternative would not be practicable and would not provide

646 significant advantages in risk reduction over alternative #3. As stated above, excavation is likely
647 to cause increased exposure risks to wastes during field work and the final disposal location for
648 this waste is undetermined. Containment of the waste in the Peter Kiewit Landfill was considered
649 a better alternative than attempting to excavate and treat the landfilled wastes because of the
650 variety of wastes present and the difficulty in adequately treating a mixture of contaminants such
651 as landfill wastes.

652 Environmental monitoring such as ground water sampling and monitoring of the seep collection
653 system will be conducted after the landfill is capped to ensure that the selected remedial action is
654 effective. The seep discharges will be collected and treated as long as seep flow is present. The
655 remedial alternative is expected to significantly reduce or eliminate the seep discharge. Immediate
656 steps will be taken to mitigate any unacceptable risks from releases detected after remedial actions
657 have been completed. Additional actions are not anticipated but might be necessary for
658 unexpected events such as new seeps or previously undetected ground water contamination.

659 The objective of Alternative #3, the preferred alternative, is to eliminate the release of
660 contaminants (i.e. seeps). Other alternatives are less likely to eliminate the seeps; therefore, they
661 were deemed less effective in reducing the mobility of contaminants (via seep discharge), less
662 effective in the protection of human health and the environment, and less permanent than
663 Alternative #3. Capping the landfill is expected to cause no insurmountable problems during
664 construction. However, as noted above in the discussion of implementability, the installation of a
665 slurry wall or sheet piling, if needed, may present some construction difficulties.

666 10.0 STATUTORY DETERMINATIONS

667 In accordance with the statutory requirements of Section 121 of CERCLA, remedial actions must
668 be protective of human health and the environment, comply with all ARARs established under
669 federal and state environmental laws, be cost effective, utilize permanent solutions and alternative
670 technologies or recovery technologies to the maximum extent practicable, and, to the extent
671 practicable, use treatment to reduce the toxicity, mobility, or volume as a principle element. In
672 addition to the CERCLA statutory mandates, the RCRA standards for remedial actions must be
673 met. Under RCRA, remedial actions must: protect human health and the environment, attain
674 media cleanup standards set by the implementing agency, control the source of releases, and
675 comply with any applicable standards for management of wastes.

676 **10.1 Protection of Human Health and the Environment**

677 The selected remedy protects human health and the environment by preventing potential human
678 and ecological exposure to landfill wastes and seep water. The area will be capped, preventing
679 infiltration of precipitation into the wastes and reducing seep water volume. The cap will also
680 provide protection against possible exposure to uncovered waste due to the eventual erosion of
681 the current cover material. If necessary to further control seep water, a vertical subsurface barrier
682 will be installed to prevent migration of groundwater into the landfill wastes.

683 **10.2 Compliance with Applicable or Relevant and Appropriate Requirements**

684 The selected remedy will comply with all ARARs established under federal and state
685 environmental laws. ARARs specific to the Peter Kiewit Landfill are presented in Appendix C.

686 **10.3 Cost-Effectiveness**

687 The selected remedy is cost-effective because it has been determined to provide overall
688 effectiveness proportional to its costs, the net present worth being \$20,877,000. Removal and
689 subsequent on- or off-site disposal was not developed as an alternative, because the high cost,
690 excessive waste volume, and unknown waste composition made such an alternative impracticable.
691 Although Alternative #3 is the next to most costly of the four considered alternatives
692 (construction of a RCRA Subtitle C Multimedia Cap would be more costly, with a present worth
693 cost of \$21,503,000), its protectiveness, compliance with ARARs, and long-term effectiveness
694 make it the most cost-effective.

695 **10.4 Utilization of Permanent Solutions and Alternative Treatment Technologies to the**
696 **Maximum Extent Practicable**

697 Ohio EPA has determined that the selected remedy for the Peter Kiewit Landfill represents the
698 maximum extent to which permanent solutions and treatment technologies can be utilized in a
699 cost-effective manner. Of those alternatives that are protective of human health and the
700 environment and comply with ARARs, this selected remedy provides the best balance of tradeoffs
701 among the alternatives in terms of long-term effectiveness and permanence, reduction in toxicity,
702 mobility, and volume through treatment, short-term effectiveness, implementability, and cost, also
703 considering community acceptance.

704 **10.5 Preference for Treatment as a Principal Element**

705 The selected remedy does not satisfy the statutory preference for treatment as a principal element
706 of the remedy because treatment of the principal threat of the site was not found to be practicable.

707 **10.6 Source Control**

708 The selected remedy will effectively control the source of releases by containing the landfill
709 wastes. Source control will be accomplished by the landfill cap, seep collection system, and, if
710 necessary, the installation of a vertical subsurface barrier.

711 **11.0 DOCUMENTATION OF SIGNIFICANT CHANGES**

712 The preferred plan for the Peter Kiewit Landfill was released for public comment in April, 1995.
713 The preferred plan identified a modified version of Alternative #3: continuation of the seep
714 collection system; capping the landfill to contain wastes and reduce water infiltration; the use of
715 vertical barriers as necessary to minimize lateral migration of contaminants; and environmental
716 monitoring to ensure that the final remedial action is protective. Ohio EPA and U.S. EPA
717 reviewed all written and verbal comments submitted during the comment period. Upon review of
718 these comments, it was determined that no significant changes to the remedy, as it was originally
719 identified in the preferred plan, were necessary.

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721

**RESPONSIVENESS SUMMARY
PETER KIEWIT LANDFILL**

722 **1.0 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT**
723 **PERIOD**

724 **1.1 Overview**

725 This responsiveness summary has been prepared to respond to each of the significant comments,
726 criticisms, and new data submitted in written or oral presentations on the preferred plan for the
727 Peter Kiewit landfill and is intended to be consistent with Sections 113(k) (2) (B) (iv) and 117(B)
728 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980
729 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986
730 (SARA). This section requires that the United States Environmental Protection Agency (U.S.
731 EPA) respond "... to each of the significant comments, criticisms, and new data submitted in
732 written or oral presentations" on the preferred plan. Numerous comments were made during the
733 public comment period that do not pertain to the proposed remedial action at the Peter Kiewit
734 Landfill. These comments were not addressed in this responsiveness summary. Attempts will be
735 made to address all comments and concerns not specific to the Peter Kiewit Landfill by
736 communicating with the public in future public informational/update meetings and during site
737 visits where Ohio EPA and/or U. S. EPA representatives are present.

738 The administrative record index for the DOE site which includes the RCRA Facility Investigation
739 (RFI), the Cleanup Alternatives Study/Corrective Measures Study (CAS/CMS) and the Preferred
740 Plan is available to the public at the Environmental Information Center located in Waverly, Ohio.
741 The first draft of the RFI was submitted to Ohio EPA and U. S. EPA on February 19, 1992. The
742 CAS/CMS was submitted on June 2, 1994, and a public notice alerting the public of their
743 opportunity to comment on the preferred plan was placed in the *Waverly Watchman* and the
744 *Portsmouth Times* on April 11, 1995. The public comment period closed on May 12, 1995. A
745 public meeting to discuss the preferred plans was held on April 18, 1995 at the Vern Riffe
746 Vocational School near the U. S. DOE plant.

747 **1.2 Summary of Significant Comments**

748 The public comments regarding the U. S. DOE site are organized into the following categories:

- 749 (1) Summary of comments and Agency responses to citizens regarding the preferred
750 plan;

751 (2) Summary of comments from U. S. DOE and Agency responses.

752 **2.0 COMMENTS FROM THE COMMUNITY**

753 1. A commenter expressed concern regarding the short time period Ohio EPA and U.S. EPA
754 had given between notification of the public meeting and the meeting date on April 18th.

755 **Ohio EPA's Response:** The purpose of the meeting was to present the remediation alternatives
756 being considered to the public and to accept oral comments. Written comment were accepted
757 throughout the comment period. Holding the meeting earlier in the public comment period, gave
758 citizens more time to consider the information presented prior to the end of the comment period.
759 By holding the meeting sooner, rather than later in the comment period, citizens had a greater
760 opportunity to provide comments once the alternatives were presented. The length of the
761 comment period was consistent with federal and state regulations and no request for a comment
762 period extension was requested.

763 2. This same commenter also pointed out that U. S. EPA does not have the authority to
764 regulate radioactive constituents in drinking water and therefore
765 it was not accurate to say that the preferred remedy complied with all laws
766 and regulations.

767 **Ohio EPA's Response:** The authority of U. S. EPA to regulate radioactive material has some
768 restrictions and does not apply to all radioactive material. However, many radioactive materials
769 from U. S. DOE facilities and the PORTS site in particular are subject to regulation by Ohio EPA
770 and/or U. S. EPA. Designated levels for some radioactive materials in the Safe Drinking Water
771 Act (SDWA) such as gross alpha, gross beta, radium and radon do apply to U. S. DOE facilities
772 and CERCLA also covers radioactive materials not otherwise exempted by the Atomic Energy
773 Act of 1954. Thus, U. S. EPA and Ohio EPA have authority over certain radioactive materials in
774 drinking water. Public water supplies in the State are required to conduct the above listed
775 radioactive analyte list.

776 During evaluation of alternatives, a primary criterion is protection of human health and the
777 environment. Ohio EPA and U. S. EPA evaluate all alternatives to determine their ability to
778 protect human health. Leaching of radioactive material to groundwater, ingestion exposures to
779 both soils and waters, dust inhalation and dermal contact are all considered during alternative
780 evaluation and selection.

781 3. This commenter also asked what decisions were being made as to the extent of cleanup, if
782 there is a cleanup goal and if some plant conversion was anticipated (such as a commercial
783 nuclear waste treatment facility) and also recommended that a "budget plan" be put in
784 place for restoration costs.

785 **Ohio EPA's Response:** Throughout the RFI and CAS/CMS process, Ohio EPA and U. S. EPA
786 have required that the risk assessments evaluate unrestricted future use with the reasonable
787 maximum exposure (RME) being residential use of the property. The one in a million excess
788 cancer rate level (1×10^{-6}) has been identified as a remediation goal. At this time, future
789 commercial and unrestricted future residential use has been evaluated for the PORTS site by Ohio
790 EPA or U. S. EPA. Clean-up goals will be protective of the future use designated for the site. In
791 regards to budget considerations, all of the alternatives are evaluated with respect to cost but it is
792 not considered a primary screening criteria.

793 4. This commenter ended by requesting that the agencies consider human health more than
794 cost when determining remedies for waste units.

795 **Ohio EPA's Response:** Ohio EPA agrees with this request. As discussed above, remedial
796 action decisions place primary emphasis on the protection of human health and the environment.
797 Cost is always considered, but is done so after remediation goals are established for the protection
798 of human health and the environment. The remedial alternative that is protective, complies with
799 ARARs, and is cost-effective is selected. Cost-effectiveness, as stated in the NCP, is determined
800 by evaluating the overall effectiveness of an alternative and then assessing the cost of the
801 alternative to ensure that the cost is proportional to the overall effectiveness.

802 5. Another commenter expressed that the area of the landfill was greater than stated during
803 the public meeting. An additional concern noted by this commenter was the burn area that
804 was in operation at the landfill area. Also mentioned was the disposal of "85,000 pounds
805 of metal hydraulic sludge from the X-705", and also waste oils and solvents.

806 **Ohio EPA's Response:** Ohio EPA stated in the public meeting that the acreage of the landfill
807 was not exactly known and the acreage was estimated by scaling dimensions from maps included
808 in investigation documents from U. S. DOE. It was not intended to be a precise value and was
809 used by Ohio EPA and U. S. EPA to provide a description of the landfill. During the
810 investigation work at the Peter Kiewit landfill, monitoring wells and soil borings were taken
811 around the perimeter of the known disposal area. This investigation work served to identify the
812 approximate area where wastes were placed. Because the approximate dimensions of the landfill
813 are known, the chosen remedy for the landfill will not be affected if a precise acreage for the
814 landfill is not available. It is common when addressing old landfills to encounter incomplete
815 information because accurate records were not usually kept. However, cleanup actions will be
816 designed to address all known and suspect areas of waste disposal. Environmental monitoring of
817 groundwater and surface water will be conducted on a routine basis to evaluate the selected
818 remedy's effectiveness.

819 Ohio EPA believes that the commenter was referring to the X-749 landfill and not the Peter
820 Kiewit landfill when commenting about the sludge from the X-705 building. The X-749 landfill

821 did receive 85,000 pounds of hydroxide sludge between August, 1984 and June, 1985 (QI RFI,
822 1994). A cap was placed on this landfill and a leachate collection system was installed in 1991.

823 Existing plant engineering drawings indicate that a burn pit was operated at the landfill by the
824 construction contractor to dispose of construction waste. There are not records that characterize
825 the material that was burned, nor are there records of the quantities or characterization of wastes
826 disposed in the Peter Kiewit landfill during it's operation.

827 **3.0 COMMENTS FROM THE U. S. DOE**

828 The U. S. DOE identified the following concerns in the Preferred Plan and presented these
829 concerns in written correspondence to Ohio EPA and U. S. EPA during the public comment
830 period.

831 **1. Page 8, Line 14 of the Preferred Plan:**

832 **U. S. DOE Comment:** "Geologic data do not indicate that the Sunbury Shale is absent beneath
833 the landfill..."

834 **Ohio EPA's Response:** During development of the preferred plan document for public review,
835 Ohio EPA and U.S. EPA referenced past documents such as the RFI and the CAS/CMS to
836 assemble information for presentation in the plan. In this specific case, Section 6.1.2.1 of the
837 CAS/CMS document was used in part as a reference for geologic information. Section 6.1.2.1 of
838 the CAS/CMS discusses the absence of the Sunbury Shale in the southeast portion of the landfill
839 and also where the Sunbury and Berea have been eroded in the drainage ravine south of the
840 landfill. The inference that the Sunbury Shale was likely absent from the landfill area was drawn
841 from these statements. Ohio EPA agrees that this statement is a generalization and should have
842 been more specific to the areas specifically identified in the RFI and CAS/CMS. However, this
843 statement was merely intended to provide a description of the geology in the vicinity of the Peter
844 Kiewit Landfill and should not be construed as a statement
845 made with the intention of supporting the Agencies preferred remedy for the Peter Kiewit
846 Landfill.

847 **2. Page 9, Line 2:**

848 **U. S. DOE Comment:** "Construction of the seep collection system is complete and all data
849 indicate that the system is effective in preventing discharge of contaminants to Big Run Creek."

850 **Ohio EPA's Response:** Ohio EPA agrees with U. S. DOE's comment. The Agency's
851 evaluation of all of the alternatives assumed that the seep collection was operating and would
852 continue operating as long as necessary.

853 3. Page 27, Line 6:

854 **U. S. DOE Comment:** "While it is true that Alternative #3 has the most extensive construction
855 activities associated with it, it is not clear that this alternative is more protective...."

856 **Ohio EPA's Response:** During evaluation of the alternatives for the Peter Kiewit Landfill, the
857 Agencies ranked each alternative according to its performance (identifying the most effective to
858 the least effective alternative) in each of the eight criteria. This was done for all eight criteria,
859 even though some of the differences between alternatives may be small. In the case of "Overall
860 Protection of Human Health and the Environment", under the current use (i.e. short term), the
861 differences between the alternatives may be small. However, the Agencies believe
862 that the differences between alternatives are more pronounced when evaluating an alternative's
863 ability to be protective over the long term.

864 4. Page 27, Line 10:

865 **U. S. DOE Comment:** "The landfill is covered, vegetated, and maintained to prevent erosion.
866 There has been little erosion to the cover since 1968, and as part of the IRM, low spots have been
867 filled and revegetated to prevent ponding of surface water."

868 **Ohio EPA's Response:** As stated in the previous response, the objective of evaluation was to
869 rank the alternatives according to their effectiveness for each of the eight criteria. The Agencies
870 believe that the placement of an engineered solid waste cap or liner material will provide a greater
871 level of protection than will the current condition at the landfill. While the IRM may have
872 eliminated the current erosion on the east side of the landfill, erosion over time did occur in the
873 sloped area adjacent to Big Run Creek, exposing landfilled wastes. The likelihood of this re-
874 occurring in the same location or elsewhere on the site is greater without an engineered cover
875 over the waste.

876 5. Page 28, Line 30

877 **U. S. DOE Comment:** "As stated in the Preferred Plan, relevant and appropriate requirements
878 are generally not applicable and should be considered based on the specific site situation...."

879 **Ohio EPA's Response:** Ohio EPA disagrees with U. S. DOE's interpretation of the discussion
880 of ARAR's in the Preferred Plan. Relevant and appropriate requirements apply to the Peter
881 Kiewit landfill. The discussion here was not intended to point out that "relevant and appropriate"
882 requirements are generally not applicable to a cleanup situation as stated in U. S. DOE's
883 comment, but rather was intended to outline the difference between an applicable law versus a
884 relevant and appropriate application of a law or rule to a cleanup situation (e.g. a landfill such as
885 the Peter Kiewit Landfill that was closed prior to the enactment of Ohio's closure rules for solid

886 waste landfills). The applicability of the closure rule to currently operated solid waste landfills is
887 not dependent upon the observation of occurrences such as infiltration of water, exposed waste,
888 etc. The intent of capping upon closure is to prevent as much as possible the future occurrence of
889 infiltration, erosion, etc. that eventually could result in migration of wastes and subsequently
890 higher maintenance costs and necessary corrective measures.
891 When the analysis results in a determination that a requirement is both relevant and appropriate,
892 such a requirement must be complied with to the same degree as if it were applicable, unless
893 waived.

894 **6. Page 29, Line 5**

895 **U. S. DOE Comment:** "Capping of the landfill is not considered containment nor active
896 treatment under the National Contingency Plan"

897 **Ohio EPA's Response:** The statement regarding the preference for active treatment in the NCP
898 was added to emphasize this when comparing Alternative #2 to other alternatives and was
899 intended to be similar to language in the CAS/CMS documents regarding Alternative #2. It was
900 not the intent of the Agencies to imply that other alternatives for the Peter Kiewit Landfill
901 provided greater treatment than Alternative #2.

902 **7. Page 29, Line 22**

903 **U. S. DOE Comment:** "Surveillance, maintenance and scheduled improvements will reduce or
904 eliminate these concerns".

905 **Ohio EPA's Response:** Ohio EPA agrees that surveillance, maintenance and scheduled
906 improvements will reduce the concerns regarding exposed wastes and additional seep generation.
907 However, a preference is given to the permanence of an alternative and the minimization of
908 operation and maintenance. The Agencies believe that the preferred remedy will result in reduced
909 maintenance costs in the future compared to the "no further action" alternative, and will meet
910 ARARs.

911 **8. Page 30, Line 20**

912 **U. S. DOE Comment:** "Because interim remedial measures have mitigated potential risk to
913 human health and the environment, it is difficult to justify additional large-scale construction and
914 12 million dollars in costs to implement Alternative #3."

915 **Ohio EPA's Response:** The response to comment #7 above also applies to this comment. The
916 permanence of an alternative is expected to result in reduced future maintenance costs and a

917 reduced probability of future releases of waste to soils and groundwater/surface water.

918 **9. Page 31, Line 25**

919 **U. S. DOE Comment:** "A waiver could be obtained for the relevant and appropriate
920 requirement that is not met. The existing cover prevents direct contact and reduces infiltration.
921 This requirement should not be viewed as a deciding factor".

922 **Ohio EPA's Response:** The attainment of ARAR's was not the only criteria used to identify the
923 preferred alternative. Issues of long term effectiveness and permanence also affected the decision
924 to select Alternative #3 as the preferred alternative. However, the placement of a cap over the
925 Peter Kiewit Landfill was determined to be a "relevant and appropriate" requirement based on the
926 analysis required by Section 300.400 (g) (2) of the NCP. The capping requirement is "relevant
927 and appropriate" because, (a): the actions or activities regulated by the requirement and the
928 remedial action contemplated at the CERCLA site are sufficiently similar; and, (b): the
929 requirement is well suited to the site.

930 Six conditions have been established under which an ARAR may be waived: Interim Measure;
931 Greater Risk to Health and the Environment; Technical Impracticability; Equivalent Standard of
932 Performance; Inconsistent Application of State Requirements; and Fund-Balancing. With regard
933 to the capping of the Peter Kiewit Landfill, only the Equivalent Standard of Performance
934 condition potentially applies.

935 According to the preamble of the March 8, 1990 NCP, the criteria for evaluating whether an
936 alternative method is equivalent to or better than the method required by the ARAR are degree of
937 protection; level of performance; reliability into the future; and time required for results.
938 Alternatives #1, #2, and #4 do not meet these criteria because of the uncertainty of the long term
939 effectiveness of the current cover, the lack of reduction of seep water volume, the essentially
940 unlimited period of time required to achieve remedial objectives, and the unknown wastes
941 disposed in the landfill.

942 **10. Page 32, Line 24**

943 **U. S. DOE Comment:** Installation and operation of the collection system have eliminated the
944 possibility of contaminants leaving the site. Alternative #3 should be viewed as less, not more
945 permanent than Alternative #1, #2, and #4; because Alternative #3 requires perpetual operation
946 and maintenance. Under Alternatives #1, #2, and #4, however, contaminated leachate will
947 eventually cease being generated, significantly reducing operation and maintenance requirements".

948 **Ohio EPA's Response:** The Agencies disagree that Alternative #3 (capping) should be viewed
949 as less permanent than alternatives #1 (no action), #2 (institutional controls) and #4 (vertical

950 barrier), and disagree that these alternatives will have less operation and maintenance compared to
951 alternative #3. The time frame under which leachate will cease being generated is not known, but
952 is expected to be a long period of time because organic industrial wastes were likely disposed in
953 the Peter Kiewit Landfill and the attenuation of these wastes commonly requires decades or more.
954 The erosion of the landfill cover material over time will require at least as much or more routine
955 maintenance than will an engineered cap.

956 **11. U. S. DOE Comment:** "The No further Action alternative provides the most efficient and
957 effective solution to mitigating risks to human health and the environment posed by Peter Kiewit
958 Landfill. As stated in the preferred plan "The seep collection system installed west of Big Run
959 Creek is expected to address much of the estimated risk to humans and to Big Run Creek by
960 collecting contaminants released from the landfill". The seep collection system effectively
961 eliminates short-term risk to the environment, therefore, the goal of the remedial alternative
962 implemented through the CAS/CMS should be to reduce the long-term risk to the environment.
963 The No Further Action alternative accomplishes this by reducing the toxicity of material in the
964 landfill over a relatively short period of time (approximately ten years). It is expected that
965 concentration of contaminants in seep water will eventually be reduced below PQLs allowing the
966 collection system to cease operation. Implementation of the No Further Action alternative will
967 require very little additional capital cost and will mitigate the need for perpetual operation and
968 maintenance costs and large-scale construction at this unit".

969 **Ohio EPA's Response:** While the seep collection system is expected to effectively capture
970 contaminants from the landfill, an important issue is the long-term effectiveness of the no-action
971 alternative. This alternative is expected to require more maintenance in the future than
972 alternatives that reduce infiltration of water into the waste. Because it is not known what
973 quantities of containerized liquids or other organic waste may be present in the landfill, the
974 agencies are not necessarily in agreement that the reduction of contaminants will be accomplished
975 in approximately ten years as stated in U. S. DOE's comment. Unexpected future releases from
976 the landfill are considered more likely with the no-action alternative than with alternative #3,
977 therefore, Ohio EPA does not agree that the no-action alternative is the most effective
978 alternative.

APPENDIX A
FIGURES

FIGURE 1
USDOE-PORTS SITE LOCATION



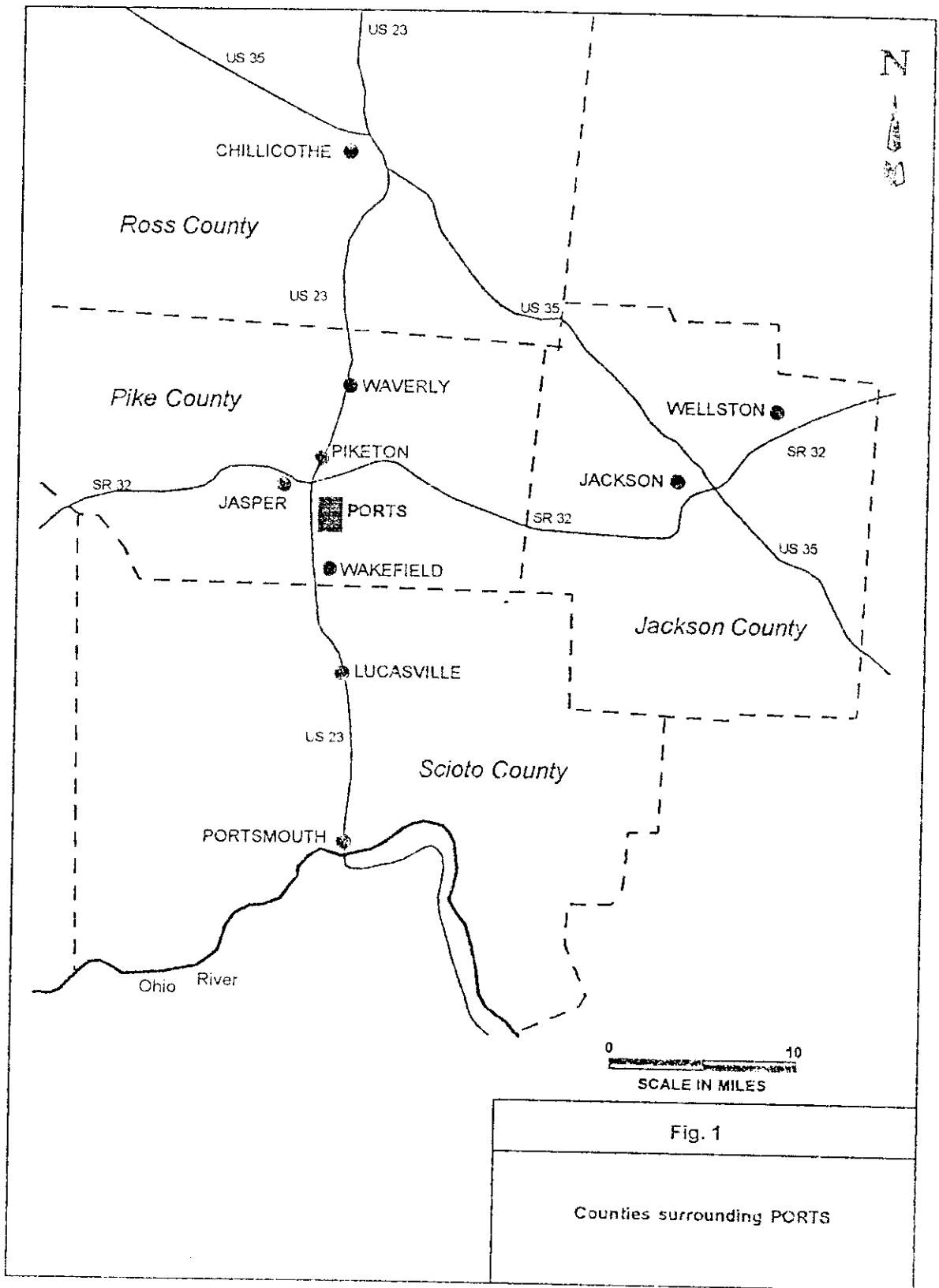


Fig. 1

Counties surrounding PORTS



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FIGURE 2
USDOE-PORTS SITE MAP



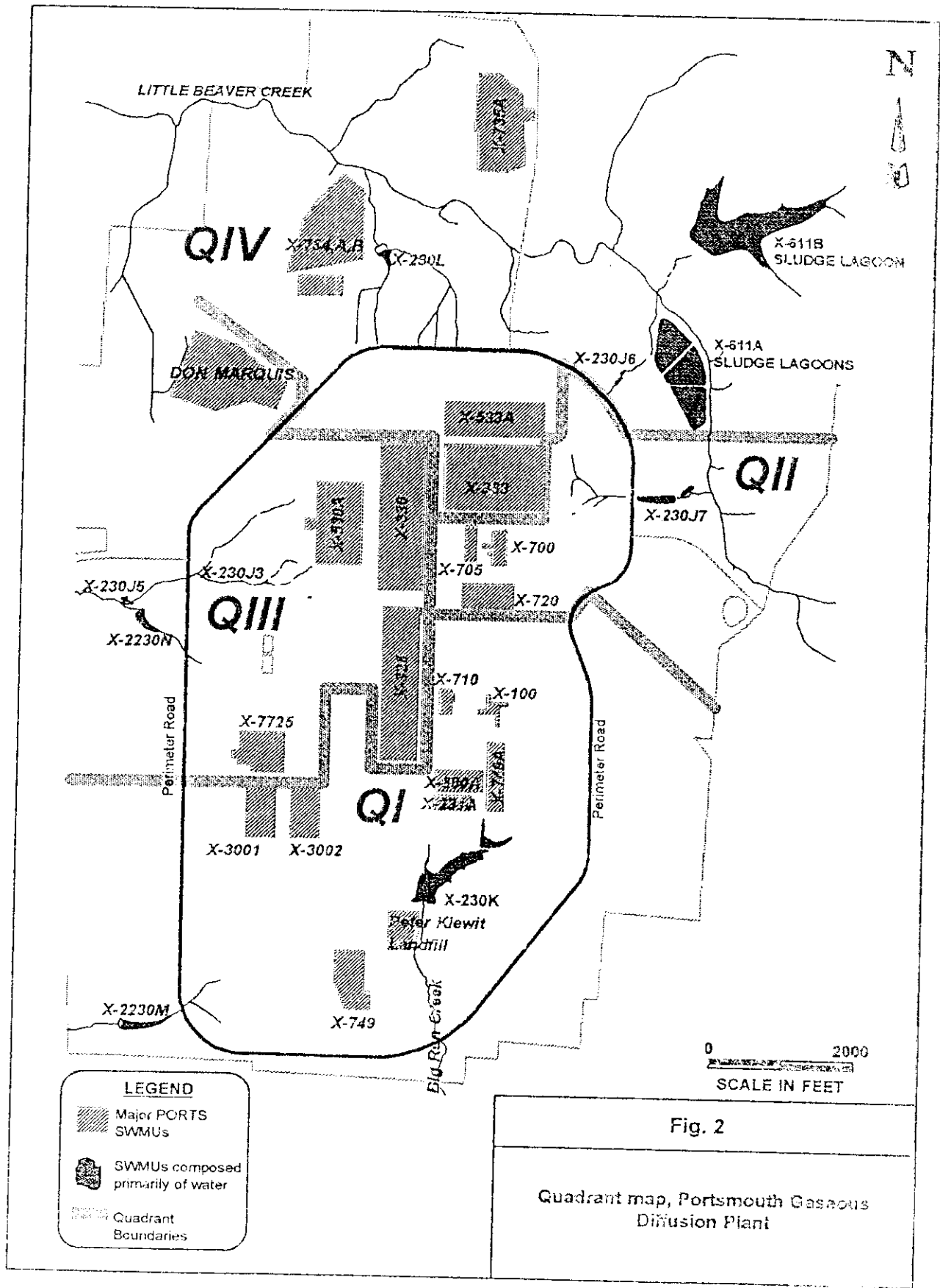




FIGURE 3
APPROXIMATE LANDFILL BOUNDARIES
PETER KIEWIT LANDFILL
(FROM PETER KIEWIT LANDFILL DRAFT CAS/CMS REPORT,
FIGURE 6.1, PAGE 6-7)



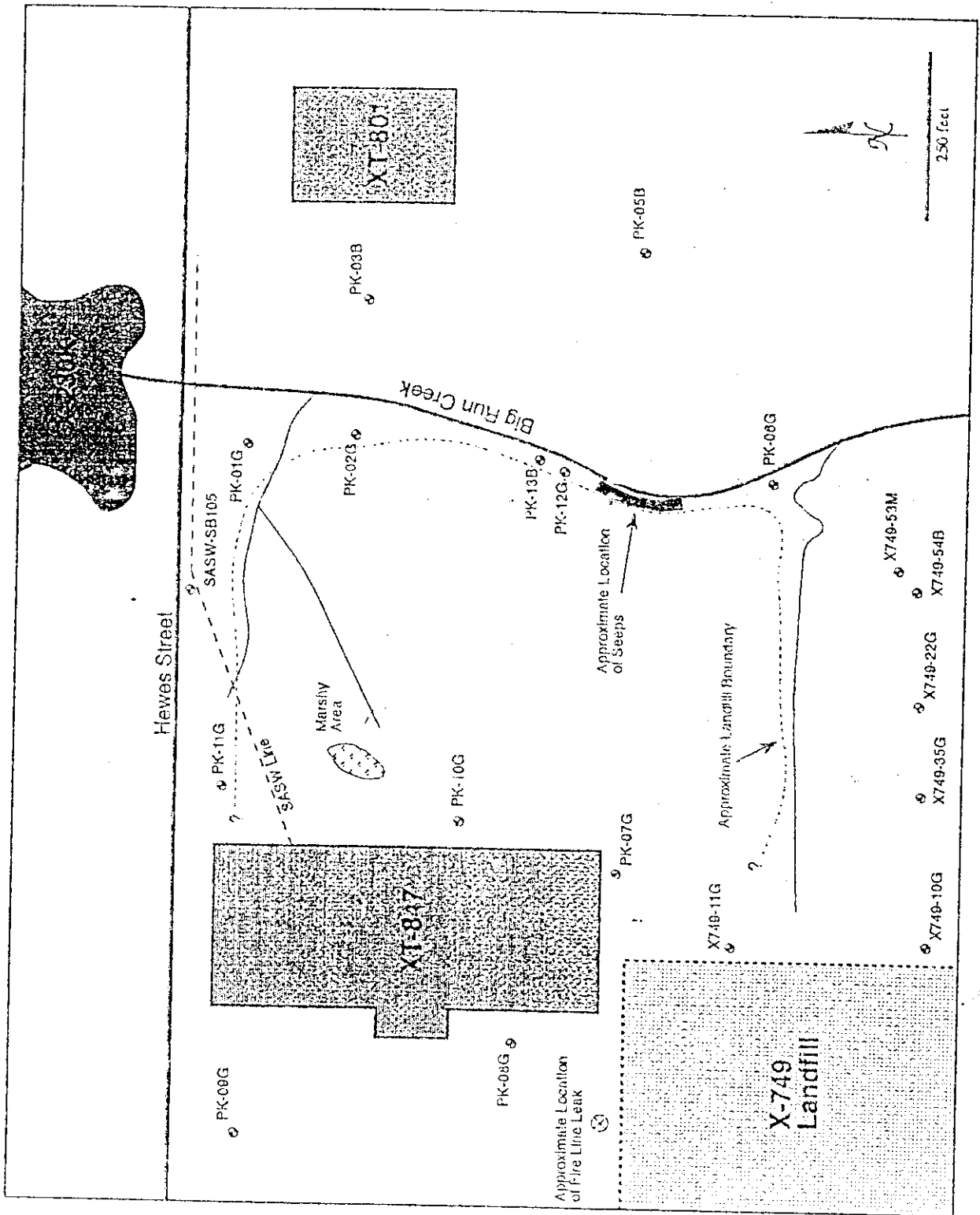


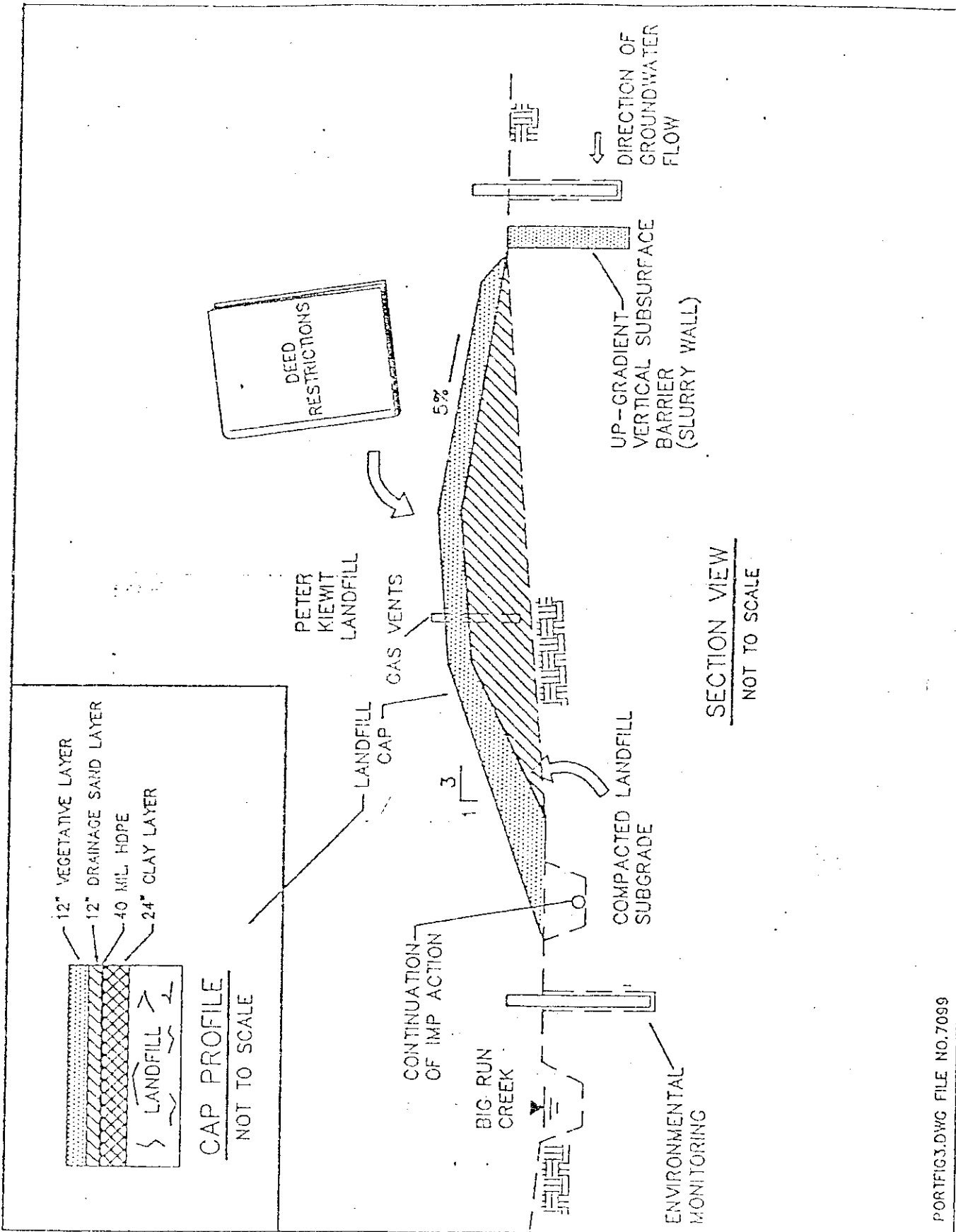
Figure 6.1. Peter Klewit Landfill: General Location Map



- FIGURE 4

SCHEMATIC OF ALTERNATIVE 3
(FROM PETER KIEWIT LANDFILL DRAFT CAS/CMS REPORT,
FIGURE 6.10, PAGE 6-86)





PORTFIG3.DWG FILE NO.7099

FIGURE 6.10 SCHEMATIC OF ALTERNATIVE 3, CAPPING, VERTICAL SUBSURFACE BARRIERS, CONTINUATION OF IMP ACTION, DEED RESTRICTIONS AND ENVIRONMENTAL MONITORING



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May, 1996

APPENDIX B
ADMINISTRATIVE RECORD INDEX



Portsmouth Gaseous Diffusion Plant
 Peter Kiewit

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Environmental Management Program

AR Doc. No. Catalog No.	Internal Doc. No. Revision	Document Title	Date Pages	Originator From	Recipient To	Location Document Type
1-20-28/00.001 763		Requirement for Interim Remedial Plan U.S. DOE - Portsmouth OH7 890 008 983	10/18/93 2	USEPA Boyle	USDOE Gillespie	PORTS AR Letter
1-20-28/00.002 875		Remedial Action at the Peter Kiewit Landfill	10/25/93 1	OEPA Rochotte	USDOE Gillespie	PORTS AR Letter
1-20-28/05.001 800	0	Interim Measures Plan: Peter Kiewit Landfill	11/18/93 83	USDOE Gillespie	USEPA, OEPA Blanchin, Rochotte, Welch	PORTS AR Plan
1-20-28/81.001 1006		Disapproval of Interim Measures Plan for the Peter Kiewit Landfill U.S. DOE Portsmouth Gaseous Diffusion Plant OH 890 008 983	1/31/94 14	USEPA Boyle	USDOE Gillespie	PORTS AR Disapproval/Comments
1-20-28/81.002 1039	EO-23-5885	USEPA Required Revisions to Interim Measures Plan - Request for Extension of Time to Submit	3/2/94 1	USDOE Gillespie	USEPA Averill	PORTS AR Letter
1-20-28/81.003 1077		Ohio EPA Comments on the Peter Kiewit Landfill Interim Measures Plan	3/15/94 2	OEPA Rochotte	USDOE Gillespie	PORTS AR Comments
1-20-28/81.004 1055	EO-23-5950	Revisions to Interim Measures Plan - Peter Kiewit Landfill	3/23/94 2	USDOE Gillespie	USDOE Averill	PORTS AR Letter
1-20-28/81.005 1151		Approval of Revision to Interim Measures Plan for Peter Kiewit Landfill Department of Energy OH7 890 983	3/30/94 1	USEPA Averill	USDOE Gillespie	PORTS AR Approval Letter
1-20-28/81.006 1088	EO-23-6007	Revised Interim Measures Plan - Peter Kiewit Landfill	4/14/94 15	USDOE Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Responses
1-20-28/05.002 1059	DOE/OR/11-1262&D2 1	Interim Measures Plan for the Peter Kiewit Landfill at the Portsmouth Gaseous Diffusion Plant	4/15/94 116	MMES Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR IMP
1-20-28/00.003 1157	EO-23-6060	Peter Kiewit (PK) Landfill Interim Remedial Measure Project	5/11/94 2	USDOE Gillespie	US Army Corps. Engineers Adamo	PORTS AR Letter
1-20-28/81.007 1169		Ohio EPA Comments on the Peter Kiewit Landfill Interim Remedial Measures Plan	5/13/94 2	OEPA Rochotte	USDOE Gillespie	PORTS AR Comments
1-20-28/31.009 1175		Disapproval of the Interim Measures Plan: Peter Kiewit Landfill for the Portsmouth	6/1/94 3	USEPA Averill	USDOE Gillespie	PORTS AR Disapproval/Comments

Portsmouth Gaseous Diffusion Plant
Peter Kiewit

Environmental Management Program

For Internal Use Only
May 1, 1996

AR Doc. No. Catalog No.	Internal Doc. No. Revision	Document Title	Date Pages	Originator From	Recipient To	Location Document Type
1-20-28/00.004 1177		Gaseous Diffusion Plant (PORTS) OH7 890 008 983	6/2/94 32	US Dept. of the Army Richmond	USDOE Gillespie	PORTS AR Letter
1-20-28/05.003 1200	DOE/OR/11-1262&D3 2	Description: Peter Kiewit (PK) Landfill Interim Remedial Measure Project Proposal	6/30/94 120	MMES Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR IMP
1-20-28/81.009 1201	EO-23-6171	Interim Measures Plan for the Peter Kiewit Landfill at the Portsmouth Gaseous Diffusion Plant Piketon, Ohio	7/1/94 27	MMES Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Responses
1-20-28/81.010 1223		Ohio EPA Approval of the Peter Kiewit Interim Measures Plan	7/25/94 2	OEPA Rochotte	USDOE Gillespie	PORTS AR Approval/Comments
1-20-28/81.011 1232		Approval with Conditions of the Interim Measures Plan: Peter Kiewit Landfill for the Portsmouth Gaseous Diffusion Plant (PORTS) OH7 890 008 983	7/26/94 1	USEPA Averill	USDOE Gillespie	PORTS AR Approval Letter
1-20-05/15.001 1236	DOE/OR/12-1295&D1 0	Peter Kiewit Landfill Draft Cleanup Alternatives Study/Corrective Measures Study Report for the Portsmouth Gaseous Diffusion Plant	7/29/94 283	SAIC Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Report
1-20-28/05.003A 1254	DOE/OR/11-1262&D4 3	Interim Measures Plan for the Peter Kiewit Landfill at the Portsmouth Gaseous Diffusion Plant Piketon, Ohio	8/23/94 28	MMES Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Revised Pages
1-20-28/81.012 1255	EF-21-6268	Description: Response to USEPA and OEPA Comments on the Peter Kiewit Landfill Interim Measures Plan	8/23/94 5	MMES Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Response
1-20-05/15.002 1257		Modeling Results - Draft Addendum to the Peter Kiewit Landfill Draft Cleanup Alternatives Study/Corrective Measures Study Report for the Portsmouth Gaseous Diffusion Plant Piketon, Ohio	8/29/94 22	SAIC Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Addendum

Environmental Management Program
 Portsmouth Gaseous Diffusion Plant
 Peter Kiewit

For Internal Use Only
 May 1, 1996

AR Doc. No. Catalog No.	Internal Doc. No. Revision	Document Title	Date Pages	Originator From	Recipient To	Location Document Type
1-20-05/81.001 1377		Description: Ohio EPA Comments on the Peter Kiewit Landfill CAS/CMS Report	10/20/94 3	OEPA Rochotte	USDOE Gillespie	PORTS AR Comments
1-20-28/55.001 1383	EF-21-6385	Notice of Intent Form (NOI) for Stormwater General Permit - Department of Energy (DOE) - Portsmouth Gaseous Diffusion Plant (PORTS) - Peter Kiewit Landfill Interim Remedial Measures (IRM) Project	10/26/94 3	USDOE Gillespie	OEPA General NPDES Permits	PORTS AR NOI
1-20-05/81.002 1387		"Peter Kiewit Landfill Draft Cleanup Alternatives" Technical Review, Comments Portsmouth Gaseous Diffusion Plant Piketon, Ohio OH7 890 008 983	11/1/94 6	USEPA Averill	USDOE Gillespie	PORTS AR Comments
1-20-05/81.003 1405	EF-21-6431	Response to OEPA Comments on the Draft Peter Kiewit CAS/CMS Report	11/21/94 4	USDOE Gillespie	USEPA, OEPA Averill, Rochotte	PORTS AR Responses
1-20-23/00.005 1418	EF-21-6446	Completion of Construction at Peter Kiewit Landfill IRM	11/30/94 2	USDOE Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Letter
1-20-05/81.004 1420	EF-21-6456	Responses to USEPA Comments Regarding Peter Kiewit Landfill CMS/CAS Report	12/5/94 11	USDOE Gillespie	USEPA, OEPA Averill, Rochotte	PORTS AR Responses
1-20-05/15.003 1500	DOE/OR/12-1295&D2	Peter Kiewit Landfill Draft Cleanup Alternatives Study/Corrective Measures Study Report for the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio	2/10/95 221	SAIC Gillespie	USEPA, OEPA Averill, Rochotte, Welch	PORTS AR Report
1-20-05/81.005 1531		Ohio EPA Approval of the X-705A/B CAS/CMS and Peter Kiewit Landfill CAS/CMS Reports	3/22/95 1	OEPA Rochotte	USDOE Gillespie	PORTS AR Approval
1-20-15/73.001 1558		Description: Public Notice: Portsmouth DOE Public Hearing on Preferred Plan for Peter Kiewit Landfill	4/11/95 1	OEPA	Public	PORTS AR Public Notice
1-20-15/60.001 1548		The Ohio EPA's and the U.S. EPA's Preferred Plan for the Peter Kiewit Landfill U.S. DOE - PORTS Site	4/13/95 72	OEPA Rochotte	Env. Information Center Childers	PORTS AR Preferred Plan

Portsmouth Gaseous Diffusion Plant
Peter Kiewit

Environmental Management Program

For Internal Use Only
May 1, 1996

Page 4

AR Doc. No. Catalog No.	Internal Doc. No. Revision	Document Title	Date Pages	Originator From	Recipient To	Location Document Type
1-20-15/75.001 1586		Description: Ohio EPA's and U.S. EPA's Meeting Regarding Preferred Plans for DOE PORTS Peter Kiewit Landfill	4/18/95 10	OEPA	Public	PORTS AR Public Meeting
1-20-15/81.001 1566	EF-21-6802	Comments Regarding the USEPA and OEPA Preferred Plan Remediation of Contamination at the Peter Kiewit Landfill	5/10/95 5	USDOE Gillespie	USEPA, OEPA Averill, Rochotte	PORTS AR Comments
1-20-28/72.001 1573	PORTS/ER/CR0018	Peter Kiewit Landfill Interim Remedial Measures	5/18/95 2	SAIC	Public	PORTS AR Fact Sheet
1-20-28/00.006 1617	EF-21-6855	Maintenance Requirements for the Peter Kiewit Landfill Interim Remedial Measure	5/31/95 3	USDOE Gillespie	OEPA Rochotte	PORTS AR Letter
1-20-28/81.013 1720		Ohio EPA Approval of the Maintenance Construction Plan at the Peter Kiewit Landfill	7/13/95 1	OEPA Rochotte	USDOE Gillespie	PORTS AR Approval
1-20-05/81.006 1785		Ohio EPA Approval of the X-705 and Peter Kiewit Landfill Corrective Measures Study Reports	8/8/95 1	OEPA Rochotte	USDOE Gillespie	PORTS AR Approval
1-20-05/81.007 1823		Description: USEPA Approval of Revised Peter Kiewit Landfill CAS/CMS Report	9/14/95 1	USEPA Averill	USDOE Gillespie	PORTS AR Approval

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May, 1996

APPENDIX C
LIST OF FEDERAL AND STATE ARARs

Federal ARARs and TBCs for Peter Kiewit Landfill at PORTS

Citation	Requirement	Applicable (A) or Relevant and Appropriate (RA) or To Be Considered (TBC) Designation	Rationale
Chemicals in Drinking Water (Solid Waste Disposal Facility) 40 CFR 257.4	A solid waste disposal facility shall not contaminate an underground drinking water source beyond the solid waste boundary (outermost perimeter of the waste). The concentration of chemicals shall not exceed background levels or listed maximum contaminant levels (MCLs), whichever is higher.	RA	Relevant and appropriate because Peter Kiewit Landfill contains several of the chemicals listed in the regulation.
Classification of Solid Waste Disposal Facilities and Practices 40 CFR 257.3-2	Solid waste disposal facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife. Solid waste disposal facilities or practices shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species identified in 50 CFR Part 17.	A	No threatened or endangered species have been identified at PORTS.
Endangered Species Act 16 U.S.C. 1531, et. seq. Endangered and Threatened Wildlife and Plants 50 CFR 17.21, 17.31, 17.61, 17.71, and 17.94 Interagency Cooperation- Endangered Species Act 50 CFR 402.01	All Federal agencies must ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of the constituent elements essential to the conservation of a listed species within a defined critical habitat. Additional requirements apply if it is determined that proposed activity could adversely affect these species or their habitat.	A	No threatened or endangered species have been identified at PORTS.
Archeological Resources Protection Act 16 U.S.C. 47099 Protection of Archeological Resources 43 CFR 7.4(a)	No person may excavate, remove, damage, or otherwise alter or deface or attempt to excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands unless such activity is pursuant to a permit.	A	DOE has conducted appropriate consultation with the State Historical Preservation Officer (SHPO).

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Citation	Requirement	Applicable (A) or Relevant and Appropriate (RA) or To Be Considered (TBC) Designation	Rationale
<p>National Historic Preservation Act 16 U.S.C. 470C</p> <p>Consideration of Historic Properties 36 CFR Part 800</p>	<p>DOE must take into account the effect of an undertaking on Historic Properties and accord the Advisory Council on Historic Preservation a reasonable opportunity to comment. Historic properties are defined as any prehistoric or historic district, building, site, structure, or object included in or eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and persons released to and located within such properties. Historic properties that are to be substantially altered or demolished must be recorded for future use and reference.</p>	<p>A</p>	<p>DOE has conducted appropriate consultation with the SHPO.</p>
<p>Archaeological and Historic Preservation Act 16 U.S.C. 469, 470</p>	<p>Upon discovery that a project may cause the irreparable loss, destruction, significant scientific finding, prehistorical finding, or loss of historical or archeological data, DOE must notify the Department of Interior in writing and provide appropriate information concerning the project. DOE must, with possible assistance from SHPO, undertake recovery, protection, and preservation of the data.</p>	<p>A</p>	<p>DOE has and will continue to consult, as appropriate, with the SHPO.</p>
<p>Procedure for Implementing NEPA 40 CFR 6.302(a)</p> <p>Executive Order 11990</p>	<p>Federal Agencies conducting certain activities must avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands when a practicable alternative exists.</p>	<p>A</p>	<p>DOE must consider and protect wetlands associated with the area near the Peter Landfill.</p>
<p>Procedures for Implementing NEPA 40 CFR 6.302(b)</p> <p>Executive Order 11988</p>	<p>Federal agencies must evaluate the potential effects of actions they may take in a floodplain to avoid, to the extent possible, adverse effects with direct or indirect development of a floodplain.</p>	<p>A</p>	<p>DOE must consider floodplain areas located within or affected by the Peter Kiewit Landfill remedial action.</p>

Federal ARARs and TBCs for Peter Kiewit Landfill at PORTS

Citation	Requirement	Applicable (A) or Relevant and Appropriate (RA) or To Be Considered (TBC) Designation	Rationale
DOE Compliance with Floodplain/Wetlands Environmental Review Requirements 10 CFR 1022.3(a), (b)(1), (2), (3), (5), (6), (c), (d), (e), 1022.5(b), (h), and 1022.11(a), (b), ©	DOE shall exercise leadership and take action in regard to floodplains/wetlands to avoid adverse impacts, incorporate floodplain management goals and wetland protection consideration into its planning, regulatory, and decision-making process, take appropriate steps to make floodplain determinations.	A	DOE must consider floodplain and wetland areas located within or affected by the Peter Kiewit Landfill remedial action.
Preparing and Transporting Hazardous Waste Off-site RCRA 40 CFR 262.20 through .23, .30 and .33 Subparts B and C	General Requirements for transporting hazardous waste for off-site disposal require a manifest. Pre-transporting requirements include appropriate packaging, labeling, marking, and placarding.	A	Any residues determined to be a RCRA hazardous waste destined for off-site disposal are subject to manifest requirements.
Land Disposal Restrictions RCRA 40 CFR 268.40 through .44 Subpart D	Restricted hazardous waste follow land disposal restriction regulations before being disposed of on land.	A	This requirement is applicable to disposal, on-site or off-site, of restricted RCRA hazardous waste.
Best Management Practices Program (BMP) Clean Water Act 40 CFR 125.104 Subpart K	BMP programs shall be developed in accordance with good engineering practices and (1) be documented in a narrative form, including necessary plot plans, drawings, and maps (2) establish specific objectives for the control of toxic and hazardous pollutants, and (3) establish specific best management practices to meet the specific objectives for control of toxic and hazardous pollutants to the waters of the United States.	A	The substantive portions of this regulation apply to the remedial action to be taken at Peter Kiewit Landfill.

Federal ARARs and TBCs for Peter Kiewet Landfill at PORTS

Citation	Requirement	Applicable (A) or Relevant and Appropriate (RA) or To Be Considered (TBC) Designation	Rationale
<p>Noise Control Act, as amended 42 U.S.C. 4901, et seq. Noise Pollution and Abatement Act 42 U.S.C. 7641</p>	<p>The public must be protected from noises that jeopardize health and welfare.</p>	<p>A</p>	<p>Because equipment and vehicles would be involved in certain aspects of the remedial action at Peter Kiewet Landfill, all substantive requirements of the act are applicable.</p>
<p>RCRA Corrective Actions under Sections 3004(u), 3005(e)(3), 3008(h), and 7003</p>	<p>Federal statutory requirements for RCRA corrective actions.</p>	<p>RA</p>	<p>RCRA corrective action provisions are relevant and appropriate to CERCLA actions involving RCRA sites.</p>
<p>DOE Order 5400.5</p>	<p>DOE orders relating to radiation dose limit, as low as reasonably achievable policy, control of residual radioactive material, management and control of radioactive materials in liquid discharges, radiation protection of public and the environment, and derived concentration guides for radionuclides contain criteria and guidelines to be considered for the management of radioactive materials.</p>	<p>TBC</p>	<p>Management of any materials at the Peter Kiewet Landfill that are contaminated with radioactive compounds should consider the criteria and guidelines established in this DOE order.</p>
<p>Management of Low Level Radioactive Waste DOE Order 5828.2A</p>	<p>DOE order relating to the management of low level radioactive waste.</p>	<p>TBC</p>	<p>Management of any materials that may be considered low level radioactive waste should consider the criteria and guidelines established in this DOE order.</p>
<p>RCRA Corrective Action Proposed Regulations 40 CFR 264 Subpart S</p>	<p>Proposed regulations for implementing RCRA corrective actions.</p>	<p>TBC</p>	<p>The proposed Subpart S regulations pertaining to RCRA corrective actions are to be considered for the Peter Kiewet Landfill remedial action.</p>

Federal ARARs and TBCs for Peter Kiewit Landfill at PORTS

Citation	Requirement	Applicable (A) or Relevant and Appropriate (RA) or To Be Considered (TBC) Designation	Rationale
RCRA Corrective Action Plan OSWER Directive No. 9902.3-2A	Guidance from EPA on conducting RCRA corrective actions.	TBC	The RCRA Corrective Action Plan guidance is to be considered for the Peter Kiewit Landfill remedial action.



ADMINISTRATIVE CODE SECTION	PARTMENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	SITE NAME	COUNTY NAME	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-1-01	03, A	LIST OF ENDANGERED PLANT SPECIES			PLANT SPECIES CONSIDERED ENDANGERED IN OHIO		
3745-1-03	01, A, 5	LIST OF ENDANGERED ANIMAL SPECIES			List of Ohio animal species considered endangered.		
3745-1-04	A, B, C, D, E	ANALYTICAL AND COLLECTION PROCEDURES			SPECIFIES ANALYTICAL METHODS AND COLLECTION PROCEDURES FOR SURFACE WATER DISCHARGES.		
3745-1-05	A, B, C	THE "FIVE FREEDOMS" FOR SURFACE WATER			ALL SURFACE WATERS OF THE STATE SHALL BE FREE FROM: A) OBJECTIONAL SUSPENDED SOLIDS. B) FLOATING DEBRIS, OIL AND SCUM. C) MATERIALS THAT CREATE A NUISANCE. D) TOXIC, HARMFUL OR LETHAL SUBSTANCES. E) NUTRIENTS THAT CREATE NUISANCE GROWTH		
3745-1-06	A, B	ANTIDEGRADATION POLICY FOR SURFACE WATER			PREVENTS DEGRADATION OF SURFACE WATER QUALITY BELOW DESIGNATED USE OR EXISTING WATER QUALITY. EXISTING INSTREAM USES SHALL BE MAINTAINED AND PROTECTED. THE MOST STRINGENT CONTROLS FOR TREATMENT SHALL BE REQUIRED BY THE DIRECTOR TO BE EMPLOYED FOR ALL NEW AND EXISTING POINT SOURCE DISCHARGES. PREVENTS ANY DEGRADATION OF "STATE RESOURCE WATERS".		
3745-1-07	C	MIXING ZONES FOR SURFACE WATER			(A) PRESENTS THE CRITERIA FOR ESTABLISHING NON-THERMAL MIXING ZONES FOR POINT SOURCE DISCHARGES (B) PRESENTS THE CRITERIA FOR ESTABLISHING THERMAL MIXING ZONES FOR POINT SOURCE DISCHARGES		
3745-1-08		WATER QUALITY CRITERIA			ESTABLISHES WATER QUALITY CRITERIA FOR POLLUTANTS WHICH DO NOT HAVE SPECIFIC NUMERICAL OR NARRATIVE CRITERIA IDENTIFIED IN TABLES 7-1 THROUGH 7-16 OF THIS RULE.		
3745-1-09		WATER USE DES FOR SCIOTO RIVER			ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE SCIOTO RIVER BASIN. SEEP COLLECTION SYSTEM DISCHARGE IS GOVERNED BY NPDES PERMIT NO. 01000000*ED (OUTFALL 01000000808), WHICH HAS THE FOLLOWING DISCHARGE LIMITATIONS: ZINC, TOTAL: MONITOR FLOW RATE: MONITOR PH: MONITOR 1,2-TRANS-DICHLOROETHYLENE: 26 MICROGRAMS / L (30 DAY) 66 MICROGRAMS / L (DAILY)		
3745-1-10	A	AIR POLLUTION NUISANCES PROHIBITED			DEFINES AIR POLLUTION NUISANCE AS AS THE EMISSION OR ESCAPE INTO THE AIR FROM ANY SOURCE(S) OF SMOKE, ASHES, DUST, DIRT, GRIME, ACIDS, FUMES, GASES, VAPORS, ODORS AND COMBINATIONS OF THE ABOVE THAT ENDANGER HEALTH, SAFETY OR WELFARE OF THE PUBLIC OR CAUSE PERSONAL INJURY OR PROPERTY DAMAGE. SUCH NUISANCES ARE PROHIBITED.		

May apply at remediation sites where chemical release threats listed species. Should also be considered where remediation activities may disrupt habitats.
 May apply to remediation sites where listed species are threatened by chemical releases. May also apply at sites where remediation could disturb existing habitats.

PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIATION AND ANY ON-SITE SURFACE WATERS AFFECTED BY SITE CONDITIONS.

PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIATION AND ANY ON-SITE SURFACE WATERS AFFECTED BY SITE CONDITIONS.

REQUIRES THAT BEST AVAILABLE TECHNOLOGY (BAT) BE USED TO TREAT SURFACE WATER DISCHARGES. DWQPA USES THIS RULE TO SET STANDARDS WHEN EXISTING WATER QUALITY IS BETTER THAN THE DESIGNATED USE.

APPLIED AS A TERM OF DISCHARGE PERMIT TO INSTALL (PTI). WOULD PERTAIN TO AN ALTERNATIVE WHICH RESULTED IN A POINT SOURCE DISCHARGE.

PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIAL ACTION AND ANY SURFACE WATERS AFFECTED BY SITE CONDITIONS.

PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.

PERTAINS TO ANY SITE WHICH CAUSES, OR MAY REASONABLY CAUSE, AIR POLLUTION NUISANCES. CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, METHANE PRODUCTION, CLEARING AND GRUBBING, WATER TREATMENT, INCINERATION AND WASTE FUEL RECOVERY.

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3746-17-02	A,B,C	PARTICULATE AMBIENT AIR QUALITY STANDARDS	ESTABLISHES SPECIFIC STANDARDS FOR TOTAL SUSPENDED PARTICULATES.	PERTAINS TO ANY SITE THAT MAY EMIT MEASURABLE QUANTITIES OF PARTICULATE MATTER (BOTH STACK AND FUGITIVE). CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, CLEARING AND GRUBBING, INCINERATION AND WASTE FUEL RECOVERY.	CHEMICAL
3746-17-06		PARTICULATE NON-DEGRADATION POLICY	DEGRADATION OF AIR QUALITY IN ANY AREA WHERE AIR QUALITY IS BETTER THAN REQUIRED BY 3746-17-02 IS PROHIBITED	PERTAINS TO SITES IN CERTAIN LOCATIONS THAT MAY EMIT OR ALLOW THE ESCAPE OF PARTICULATES (BOTH STACK AND FUGITIVE). CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, CLEARING AND GRUBBING, INCINERATION.	CHEMICAL LOCATION
3746-17-07	A-D	VISBLE PARTICULATE EMISSION CONTROL	SPECIFIES THE ALLOWABLE OPACITY FOR PARTICULATE EMISSIONS; PROVIDES EXCEPTIONS FOR UNCOMBINED WATER, START-UP/SHUTDOWN OF FUEL BURNING EQUIPMENT, MALFUNCTIONS.	PERTAINS TO ANY EMISSION OF PARTICULATE FROM A STACK. CONSIDER FOR INCINERATION AND FUEL BURNING.	CHEMICAL
3746-17-08	A1,A2,B,D	EMISSION RESTRICTIONS FOR FUGITIVE DUST	ALL EMISSIONS OF FUGITIVE DUST SHALL BE CONTROLLED.	PERTAINS TO SITES WHICH MAY HAVE FUGITIVE EMISSIONS (NON-STACK) OF DUST. CONSIDER FOR SITES THAT WILL UNDERGO GRADING, LOADING OPERATIONS, DEMOLITION, CLEARING AND GRUBBING AND CONSTRUCTION.	ACTION
3746-21-02	A,B,C	AMBIENT AIR QUALITY STANDARDS AND GUIDELINES	ESTABLISHES SPECIFIC AIR QUALITY STANDARDS FOR CARBON MONOXIDE, OZONE AND AND NON-METHANE HYDROCARBONS	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON OXIDES, OZONE OR NON-METHANE HYDROCARBONS. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY)	CHEMICAL ACTION
3746-21-03	B,C,D	METHODS OF AMBIENT AIR QUALITY MEASUREMENT	SPECIFIES MEASUREMENT METHODS TO DETERMINE AMBIENT AIR QUALITY FOR THE FOLLOWING CONSTITUENTS: CARBON MONOXIDE, OZONE AND NON-METHANE HYDROCARBONS.	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON MONOXIDE, OZONE OR NON-METHANE HYDROCARBONS. CONSIDER FOR SITES WHERE TREATMENT SYSTEMS WILL RESULT IN AIR EMISSIONS.	CHEMICAL ACTION
3746-21-06		NON-DEGRADATION POLICY	PROHIBITS SIGNIFICANT AND AVOIDABLE DETERIORATION OF AIR QUALITY.	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON OXIDES, CARBON OXIDES, AND NON METHANE HYDROCARBONS. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	ACTION
3746-21-07	A,B,C,D,J	ORGANIC MATERIALS EMISSION CONTROL: STATIONARY SOURCES	REQUIRES CONTROL OF EMISSIONS OF ORGANIC MATERIALS FROM STATIONARY SOURCES. REQUIRES BEST AVAILABLE TECHNOLOGY.	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT ORGANIC MATERIAL. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT (AIR STRIPPING), INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	ACTION CHEMICAL
3746-21-08		VOC EMISSIONS CONTROL: STATIONARY SOURCES	ESTABLISHES LIMITATIONS FOR EMISSIONS OF VOLATILE ORGANIC COMPOUNDS FROM STATIONARY SOURCES.	PERTAINS TO ANY SITE WHICH IS EMITTING OR MAY EMIT AIR CONTAMINANTS.	ACTION
3746-26-03		EMISSION CONTROL ACTION PROGRAMS	REQUIRES PREPARATION FOR AIR POLLUTION ALERTS, WARNINGS AND EMERGENCIES.	PERTAINS TO ANY SITE AT WHICH SOLID WASTES WILL BE MANAGED. PROHIBITS MANAGEMENT BY OPEN BURNING AND OPEN DUMPING.	ACTION
3746-27-05	A,S,C	AUTHORIZED, LIMITED & PROHIBITED SOLID WASTE DISPOSAL	ESTABLISHES ALLOWABLE METHODS OF SOLID WASTE DISPOSAL; SANITARY LANDFILL, INCINERATION, COMPOSTING. PROHIBITS MANAGEMENT BY OPEN BURNING AND OPEN DUMPING.	THIS PARAGRAPH PRESENTS SUBSTANTIVE REQUIREMENTS OF A SOLID WASTE PERMIT TO INSTALL. PERTAINS TO ANY NEW SOLID WASTE DISPOSAL FACILITY CREATED ON-SITE AND EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS. ALSO PERTAINS TO	ACTION
3746-27-08	B,C	REQUIRED TECHNICAL INFORMATION FOR SANITARY LANDFILLS	SPECIFIES THE MINIMUM TECHNICAL INFORMATION REQUIRED OF A SOLID WASTE PERMIT TO INSTALL. INCLUDED ARE A HYDROGEOLOGIC INVESTIGATION REPORT, LEACHATE PRODUCTION AND MIGRATION INFORMATION, SURFACE WATER DISCHARGE INFORMATION, DESIGN		

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-27-07	A, B	LOCATION CRITERIA FOR SOLID WASTE DISPOSAL PERMIT	CALCULATIONS, PLAN DRAWINGS. SPECIFIES LOCATIONS IN WHICH SOLID WASTE LANDFILLS ARE NOT TO BE SITED. INCLUDES FLOODPLAINS, SAND OR GRAVEL PITS, LIMESTONE OR SANDSTONE QUARRIES, AREAS ABOVE SOLE SOURCE AQUIFERS, WETLANDS, ETC.	EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED PER SOLID WASTE RULES. THIS RULE ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE. THIS RULE PREVENTS THE ESTABLISHMENT OF NEW SOLID WASTE LANDFILLS AND EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS IN CERTAIN UNFAVORABLE LOCATIONS. ALSO MAY PROHIBIT THE LEAVING OF WASTE IN-PLACE IN CERTAIN UNFAVORABLE LOCATIONS.	LOCATION
3745-27-07	D, F, G, H	ADDITIONAL CRITERIA FOR SANITARY LANDFILL APPROVAL	ADDITIONAL SITING REQUIREMENTS WITH RESPECT TO GEOLOGY, WATER SUPPLIES, OCCUPIED PROPERTIES, PARKLANDS AND MINE SUBSIDENCE AREAS. GOVERNS EXPANSION OF EXISTING SITES	PERTAINS TO NEW SANITARY LANDFILLS FOR SOLID WASTE DISPOSAL AND EXPANSIONS OF EXISTING FACILITIES	LOCATION ACTION
3745-27-08	C, D, H	CONSTRUCTION SPECIFICATIONS FOR SANITARY LANDFILLS	SPECIFIES THE MINIMUM REQUIREMENTS FOR THE SOIL/CLAY LAYERS, GRANULAR DRAINAGE LAYER, GEOSYNTHETICS, LEACHATE MANAGEMENT SYSTEM, GAS MONITORING SYSTEM, ETC. ALSO ESTABLISHES CONSTRUCTION REQUIREMENTS FOR FACILITIES TO BE LOCATED IN GEOLOGICALLY UNFAVORABLE AREAS.	PERTAINS TO ANY NEW SOLID WASTE DISPOSAL FACILITY CREATED ON-SITE AND ANY EXPANSIONS TO EXISTING SOLID WASTE LANDFILLS. PORTIONS ALSO PERTAIN TO AREAS OF CONTAMINATION THAT ARE CAPPED PER SOLID WASTE RULES. MAY SERVE AS SITING CRITERIA.	ACTION
3745-27-10	B, C, D	SANITARY LANDFILL - GROUND WATER MONITORING	GROUND WATER MONITORING PROGRAM MUST BE ESTABLISHED FOR ALL SANITARY LANDFILL FACILITIES. THE SYSTEM MUST CONSIST OF A SUFFICIENT NUMBER OF WELLS THAT ARE LOCATED SO THAT SAMPLES INDICATE BOTH UPGRADIENT (BACKGROUND) AND DOWNGRADIENT WATER SAMPLES. THE SYSTEM MUST BE DESIGNED PER THE MINIMUM REQUIREMENTS SPECIFIED IN THIS RULE. THE SAMPLING AND ANALYSIS PROCEDURES USED MUST COMPLY WITH THIS RULE.	PERTAINS TO ANY NEW SOLID WASTE FACILITY AND ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE. ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED IN-PLACE PER THE SOLID WASTE RULES.	ACTION
3745-27-11	B, G	FINAL CLOSURE OF SANITARY LANDFILL FACILITIES	REQUIRES CLOSURE OF A LANDFILL IN A MANNER WHICH MINIMIZES THE NEED FOR POST-CLOSURE MAINTENANCE AND MINIMIZES POST-CLOSURE FORMATION AND RELEASE OF LEACHATE AND EXPLOSIVE GASES TO AIR, SOIL GROUND WATER OR SURFACE WATER. SPECIFIES ACCEPTABLE CAP DESIGN; SOIL BARRIER LAYER, GRANULAR DRAINAGE LAYER, SOIL AND VEGETATIVE LAYER. PROVIDES FOR USE OF COMPARABLE MATERIALS TO THOSE SPECIFIED WITH APPROVAL OF DIRECTOR.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY NEW SOLID WASTE LANDFILLS CREATED ON-SITE, ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE AND ANY EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED IN-PLACE PER THE SOLID WASTE RULES.	ACTION
3745-27-12	A, B, D, E, H, I, J	SANITARY LANDFILL - EXPLOSIVE GAS MONITORING	ESTABLISHES WHEN AN EXPLOSIVE GAS MONITORING PLAN IS REQUIRED FOR SOLID WASTE LANDFILLS. SPECIFIES THE MINIMUM INFORMATION REQUIRED IN SUCH A PLAN, INCLUDING DETAILED ENGINEERING PLANS, SPECIFICATIONS, INFORMATION ON GAS GENERATION POTENTIAL, SAMPLING AND MONITORING PROCEDURES, ETC. MANDATES WHEN REPAIRS MUST BE MADE TO AN EXPLOSIVE GAS MONITORING SYSTEM. THIS RULE ONLY APPLIES TO LANDFILLS WHICH RECEIVED "PUTRESCIBLE" SOLID WASTES.	PERTAINS TO ANY SITE WHICH HAS HAD OR WILL HAVE PUTRESCIBLE SOLID WASTES PLACED ON-SITE AND WHICH HAS A RESIDENCE OR OTHER OCCUPIED STRUCTURE LOCATED WITHIN 1000 FEET OF THE EMPLOYED SOLID WASTE.	ACTION LOCATION
3745-27-12	I, J	EXPLOSIVE GAS MONITORING FOR SANITARY LANDFILLS	IDENTIFIES PARAMETERS AND SCHEDULE FOR EXPLOSIVE GAS MONITORING	PERTAINS TO ANY DISPOSAL SITE WHERE EXPLOSIVE GAS GENERATION AND MIGRATION MAY BE A THREAT.	ACTION CHEMICAL
3745-27-13	C	DISTURBANCES WHERE HAZ OR SOLID WASTE FAC WAS OPERATED	REQUIRES THAT A DETAILED PLAN BE PROVIDED TO DESCRIBE HOW ANY PROPOSED FILLING, GRADING, EXCAVATING, BUILDING, DRILLING OR MINING ON LAND WHERE A HAZARDOUS WASTE FACILITY OR SOLID WASTE FACILITY WAS OPERATED WILL BE ACCOMPLISHED. THIS INFORMATION MUST DEMONSTRATE THAT THE PROPOSED ACTIVITIES WILL NOT CREATE A NUISANCE OR ADVERSELY AFFECT THE PUBLIC HEALTH OR THE ENVIRONMENT. SPECIAL TERMS TO CONDUCT SUCH ACTIVITIES MAY BE IMPOSED BY THE DIRECTOR TO PROTECT THE	PERTAINS TO ANY SITE AT WHICH HAZARDOUS OR SOLID WASTE HAS BEEN MANAGED, EITHER INTENTIONALLY OR OTHERWISE. DOES NOT PERTAIN TO AREAS THAT HAVE HAD ONE-TIME LEAKS OR SPILLS.	ACTION LOCATION

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PARTICULAR PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
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3746-27-14	A	POST-CLOSURE CARE OF SANITARY LANDFILL FACILITIES	PUBLIC AND THE ENVIRONMENT. SPECIFIES THE REQUIRED POST-CLOSURE CARE FOR SOLID WASTE FACILITIES. INCLUDES CONTINUING OPERATION OF LEACHATE AND SURFACE WATER MANAGEMENT SYSTEMS, MAINTENANCE OF THE CAP SYSTEM AND GROUND WATER MONITORING.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY NEWLY CREATED SOLID WASTE LANDFILLS ON-SITE, ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE AND ANY EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED PER THE SOLID WASTE RULES.	ACTION
3746-27-19	E	SANITARY LANDFILL GENERAL OPERATIONAL REQUIREMENTS	SPECIFIES GENERAL OPERATIONAL REQUIREMENTS FOR SOLID WASTE LANDFILLS. INCLUDES REQUIREMENTS FOR: PREPARATIONS FOR OPERATING DURING INCLEMENT WEATHER; MANAGEMENT TO MINIMIZE NOISE, DUST AND ODORS; VECTOR CONTROL; ADEQUATE FIRE CONTROL EQUIPMENT; NOT CAUSING A NUISANCE OR HEALTH HAZARD OR WATER POLLUTION; MINIMIZATION OF DISTURBED AREA; CHEMICAL COMPATIBILITY TESTING, IF NECESSARY. SPECIFIES THAT BULK LIQUIDS, HAZARDOUS WASTE, PCBs AND INFECTIOUS WASTE MAY NOT BE ACCEPTED FOR DISPOSAL.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES.	ACTION
3746-27-19	D(2)	SANITARY LANDFILL OPERATIONS - CONSTRUCTION COMPLIANCE	REQUIRES THE OWNER/OPERATOR TO IMPLEMENT MEASURES TO ATTAIN COMPLIANCE WITH REQUIREMENTS OF THESE RULES IN THE EVENT THAT TESTING INDICATES THAT A COMPONENT OR PORTION OF THE LANDFILL HAVE NOT BEEN CONSTRUCTED IN ACCORDANCE WITH THOSE RULES.	PERTAINS TO "NEW" SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. ALSO PERTAINS TO CONSTRUCTION OF FINAL COVER SYSTEMS.	ACTION
3746-27-19	H	SANITARY LANDFILL OPERATIONS - FINAL COVER	INCLUDES REQUIREMENTS FOR THE FINAL CAP SYSTEM FOR AREAS AT FINAL ELEVATIONS.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES.	ACTION
3746-27-19	J	SANITARY LANDFILL OPERATIONS - SURFACE WATER MGMT.	SURFACE WATER MUST BE DIVERTED FROM AREAS WHERE SOLID WASTE IS BEING, OR HAS BEEN, DEPOSITED. ALSO REQUIRES RUN-ON AND RUN-OFF TO BE CONTROLLED TO MINIMIZE INFILTRATION THROUGH THE COVER MATERIALS AND TO MINIMIZE EROSION OF THE CAP SYSTEM.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES.	ACTION
3746-27-19	K	SANITARY LANDFILL OPERATIONS - LEACHATE MANAGEMENT	REQUIRES REPAIR OF LEACHATE OUTBREAKS; COLLECTION AND TREATMENT OF LEACHATE ON THE SURFACE OF THE LANDFILL; AND ACTIONS TO MINIMIZE, CONTROL OR ELIMINATE CONDITIONS CAUSING LEACHATE OUTBREAKS.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES.	ACTION
3746-27-20		SANITARY LANDFILLS - PROHIBITIONS AND CLOSURE	SPECIFIES CERTAIN OPERATIONAL AND LOCATION STANDARDS FOR LANDFILLS ACCEPTING WASTE AFTER JUNE 1, 1984. ALSO REQUIRES CLOSURE OF EXISTING UNITS WHICH DO NOT MEET THOSE STANDARDS BY OCTOBER 6, 1986.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS	ACTION
3746-27-20		WATER/AIR PERMIT CRITERIA FOR DECISION BY THE DIRECTOR	A PERMIT TO INSTALL (PTI) OR PLANS MUST DEMONSTRATE BEST AVAILABLE TECHNOLOGY (BAT) AND SHALL NOT INTERFERE WITH OR PREVENT THE ATTAINMENT OR MAINTENANCE OF APPLICABLE AMBIENT AIR QUALITY STANDARDS.	PERTAINS TO ANY SITE THAT WILL DISCHARGE TO ON-SITE SURFACE WATER OR WILL EMIT CONTAMINANTS INTO THE AIR.	ACTION
3746-27-20		WATER QUALITY CRITERIA FOR DECISION BY THE DIRECTOR	SPECIFIES SUBSTANTIVE CRITERIA FOR SECTION 401 WATER QUALITY CRITERIA FOR DREDGING, FILLING, OBSTRUCTION OR ALTERING WATERS OF THE STATE.	PERTAINS TO ANY SITE THAT HAS OR WILL AFFECT WATERS OF THE STATE.	ACTION

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-60-44	B	PERMIT INFO REQ FOR ALL HAZ WASTE LAND DISP FACILITIES	<p>ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE FACILITY COMPLIANCE. INCLUDES INFORMATION SUCH AS FACILITY DESCRIPTION, WASTE CHARACTERISTICS, EQUIPMENT DESCRIPTIONS, CONTINGENCY PLAN, FACILITY LOCATION, TOPOGRAPHIC MAP, ETC.</p> <p>ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE LAND DISPOSAL PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUATE PROTECTION OF THE GROUND WATER. INCLUDES INFORMATION SUCH AS GROUND WATER MONITORING DATA, INFORMATION ON INTERCONNECTED AQUIFERS, PLUME(S) OF CONTAMINATION, PLANS AND REPORTS ON GROUND WATER MONITORING PROGRAM, ETC.</p>	<p>PERTAINS TO ANY SITE WHICH WILL HAVE TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTE OCCURRING ON-SITE OR HAS EXISTING AREAS OF HAZARDOUS WASTE CONTAMINATION ON-SITE THAT WILL BE CAPPED IN-PLACE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p> <p>PERTAINS TO ANY FACILITY/SITE WHICH WILL HAVE HAZARDOUS WASTE DISPOSED OF ON-SITE OR HAS EXISTING AREAS OF HAZARDOUS WASTE CONTAMINATION ON-SITE THAT WILL BE CAPPED IN-PLACE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p>	ACTION
3745-60-44	C1	ADD'L PERMIT INFO: HAZ WASTE STORAGE IN CONTAINERS	<p>ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF CONTAINER STORAGE. INCLUDES INFORMATION SUCH AS DESCRIPTION OF CONTAINMENT SYSTEM, DETAILED DRAWINGS, ETC. SEE OAC 3745-66-70 THROUGH 3745-66-78 FOR ADDITIONAL CONTAINER REQUIREMENTS.</p>	<p>PERTAINS TO ANY SITE AT WHICH STORAGE OF HAZARDOUS WASTE ON-SITE WILL OCCUR IN CONTAINERS. CONSIDER FOR WASTES AND CONTAMINATED SOILS THAT ARE STORED PRIOR TO TREATMENT OR DISPOSAL. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-66-70 THROUGH 3745-66-78, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p>	ACTION
3745-60-44	C2	ADD'L PERMIT INFO: HAZ WASTE STORAGE/ TREAT IN TANKS	<p>ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF TANK TREATMENT AND STORAGE UNITS. INCLUDES INFORMATION SUCH AS ASSESSMENT OF STRUCTURAL INTEGRITY, DETAILED PLANS OF TANK SYSTEM(S), DESCRIPTION OF SECONDARY CONTAINMENT SYSTEM, ETC. SEE OAC 3745-66-80 THROUGH 3745-66-88 FOR ADDITIONAL REQUIREMENTS.</p>	<p>PERTAINS TO ANY SITE AT WHICH STORAGE OR TREATMENT OF HAZARDOUS WASTE IN TANKS WILL OCCUR ON-SITE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-66-80 THROUGH 3745-66-88, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p>	ACTION
3745-60-44	C4	ADD'L PERMIT INFO: HAZ WASTE STORAGE/TREAT IN WASTE PILES	<p>ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF SURFACE IMPOUNDMENTS USED TO TREAT OR STORE HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-66-20 THROUGH 3745-66-33 FOR ADDITIONAL SURFACE IMPOUNDMENT REQUIREMENTS.</p>	<p>PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE STORED OR TREATED IN SURFACE IMPOUNDMENTS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-66-20 THROUGH 3745-66-33, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p>	ACTION
3745-60-44	C8	ADD'L PERMIT INFO: ENVIRONMENTAL PERFORMANCE STANDARDS	<p>ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS, AND UNDERGROUND INJECTION WELLS USED TO TREAT, STORE OR DISPOSE OF HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-67-01 ADDITIONAL REQUIREMENTS.</p>	<p>PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE OR HAS BEEN STORED, TREATED OR DISPOSED OF IN SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS OR UNDERGROUND INJECTION WELLS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-67-01 ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p>	ACTION
3745-60-44	C7	ADD'L PERMIT INFO: HAZ WASTE DISPOSAL IN LANDFILLS	<p>ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF LANDFILLS USED FOR DISPOSAL OF HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-67-02 THROUGH 3745-67-18 FOR ADDITIONAL LANDFILL REQUIREMENTS.</p>	<p>PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE OR HAS BEEN DISPOSED OF IN LANDFILLS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-67-02 THROUGH 3745-67-18, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.</p>	ACTION

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARIAR TYPE
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3746-60-14	C8	ADD'L PERMIT INFO: HAZ WASTE T/SD IN MISC UNITS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF MISCELLANEOUS UNITS USED TO TREAT OR STORE HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC.. SEE OAC 3746-67-90 THROUGH 3746-67-93 FOR ADDITIONAL REQUIREMENTS FOR MISCELLANEOUS UNITS.	PERTAINS TO FACILITY/SITE AT WHICH HAZARDOUS WASTE WILL BE STORED, TREATED OR DISPOSED OF IN MISCELLANEOUS UNITS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3746-67-90 THROUGH 3746-67-93, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
3746-60-68	E,I,J	HAZARDOUS WASTE FACILITY PERMIT CONDITIONS	ESTABLISHES GENERAL PERMIT CONDITIONS APPLIED TO ALL HAZARDOUS WASTE FACILITIES IN OHIO. INCLUDES CONDITIONS SUCH AS OPERATION AND MAINTENANCE, SITE ACCESS, MONITORING, ETC.	PERTAINS TO ALL ALTERNATIVES THAT WILL INCORPORATE TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTE.	ACTION
3746-61-07	A,B	RESIDUES OF HAZ WASTES IN EMPTY CONTAINERS	EXEMPTS THE RESIDUES OF HAZARDOUS WASTES FROM EMPTY CONTAINERS FROM THE HAZARDOUS WASTE REGULATIONS. PROVIDES SPECIFIC DEFINITIONS FOR THESE RESIDUES.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES STORAGE OF HAZARDOUS WASTE ON-SITE IN CONTAINERS.	ACTION
3746-62-11	A-D	EVALUATION OF WASTES	ANY PERSON GENERATING A WASTE MUST DETERMINE IF THAT WASTE IS A HAZARDOUS WASTE (EITHER THROUGH LISTING OR BY CHARACTERISTIC).	PERTAINS TO SITES AT WHICH WASTES OF ANY TYPE (BOTH SOLID AND HAZARDOUS) ARE LOCATED.	CHEMICAL ACTION
3746-62-34		ACCUMULATION TIME OF HAZARDOUS WASTE	IDENTIFIES MAXIMUM TIME PERIODS THAT A GENERATOR MAY ACCUMULATE A HAZARDOUS WASTE WITHOUT BEING CONSIDERED AN OPERATOR OF A STORAGE FACILITY. ALSO ESTABLISHES STANDARDS FOR MANAGEMENT OF HAZARDOUS WASTES BY GENERATORS.	PERTAINS TO A SITE WHERE HAZARDOUS WASTE WILL BE GENERATED AS A RESULT OF THE REMEDIAL ACTIVITIES.	CHEMICAL ACTION
3746-64-13	A	GENERAL ANALYSIS OF HAZARDOUS WASTE	PRIOR TO ANY TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTES, A REPRESENTATIVE SAMPLE OF THE WASTE MUST BE CHEMICALLY AND PHYSICALLY ANALYZED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	CHEMICAL ACTION
3746-64-14	A,B,C	SECURITY FOR HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE SECURED SO THAT UNAUTHORIZED AND UNKNOWN ENTRY ARE MINIMIZED OR PROHIBITED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3746-64-15	A,C	INSPECTION REQUIREMENTS FOR HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE INSPECTED REGULARLY TO DETECT MALFUNCTIONS, DETERIORATIONS, OPERATIONAL ERRORS AND DISCHARGES. ANY MALFUNCTIONS OR DETERIORATIONS DETECTED SHALL BE REMEDIATED EXPEDITIOUSLY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3746-64-17	A,B,C	REQ FOR IGNITABLE, REACTIVE OR INCOMPATIBLE HAZ WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE, REACTIVE OR INCOMPATIBLE WASTES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE, IGNITABLE OR INCOMPATIBLE WASTES ARE PRESENT.	ACTION LOCATION
3746-64-18	A,B,C	LOCATION STANDARDS FOR HAZARDOUS WASTE T/SD FACILITIES	RESTRICTS THE SITING OF HAZARDOUS WASTE FACILITIES IN AREAS OF SEISMIC ACTIVITY OR FLOODPLAINS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	LOCATION
3746-64-31		DESIGN & OPERATION OF HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE DESIGNED, CONSTRUCTED, MAINTAINED AND OPERATED TO MINIMIZE THE POSSIBILITY OF FIRE, EXPLOSION OR UNPLANNED RELEASE OF HAZARDOUS WASTE OR HAZARDOUS CONSTITUENTS TO THE AIR, SOIL OR SURFACE WATER WHICH COULD THREATEN HUMAN HEALTH OR THE ENVIRONMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION

Ohio Administrative Code (OAC) Chapters
 COUNTY NAME
 SITE NAME

ADMINIS. CODE SECTION	PARTMENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	APAR TYPE
3745-64-33		TESTING & MAINTENANCE OF EQUIPMENT; HAZ WASTE FACILITIES	ALL HAZARDOUS WASTE FACILITIES MUST BE EQUIPPED WITH EMERGENCY EQUIPMENT, SUCH AS AN ALARM SYSTEM, FIRE CONTROL EQUIPMENT AND A TELEPHONE OR RADIO. ALL HAZARDOUS WASTE FACILITIES MUST TEST AND MAINTAIN EMERGENCY EQUIPMENT TO ASSURE PROPER OPERATION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-34		ACCESS TO COMMUNICATIONS OR ALARM SYSTEM; HAZ WASTE FAC	WHENEVER HAZARDOUS WASTE IS BEING HANDLED, ALL PERSONNEL INVOLVED SHALL HAVE IMMEDIATE ACCESS TO AN INTERNAL ALARM OR EMERGENCY COMMUNICATION DEVICE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-37	A, B	ARRANGEMENTS/ AGREEMENTS WITH LOCAL AUTHORITIES	ARRANGEMENTS OR AGREEMENTS WITH LOCAL AUTHORITIES, SUCH AS POLICE, FIRE DEPARTMENT AND EMERGENCY RESPONSE TEAMS MUST BE MADE. IF LOCAL AUTHORITIES WILL NOT COOPERATE, DOCUMENTATION OF THAT NON-COOPERATION SHOULD BE PROVIDED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-62	A, F	CONTENT OF CONTINGENCY PLAN; HAZ WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST HAVE A CONTINGENCY PLAN THAT ADDRESSES ANY UNPLANNED RELEASE OF HAZARDOUS WASTES OR HAZARDOUS CONSTITUENTS INTO THE AIR, SOIL OR SURFACE WATER. THIS RULE ESTABLISHES THE MINIMUM REQUIRED INFORMATION OF SUCH A PLAN.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-63	A, B	COPIES OF CONTINGENCY PLAN; HAZARDOUS WASTE FACILITIES	COPIES OF THE CONTINGENCY PLAN REQUIRED BY 3745-64-60 MUST BE MAINTAINED AT THE FACILITY AND SUBMITTED TO ALL LOCAL POLICE DEPARTMENTS, FIRE DEPARTMENTS, HOSPITALS LOCAL EMERGENCY RESPONSE TEAMS AND THE OHIO EPA.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-64	A	AMENDMENT OF CONTINGENCY PLAN; HAZ WASTE FACILITIES	THE CONTINGENCY PLAN MUST BE AMENDED IF IT FAILS IN AN EMERGENCY, THE FACILITY CHANGES IN ITS DESIGN, CONSTRUCTION, MAINTENANCE OR OPERATION, THE LIST OF EMERGENCY COORDINATORS CHANGE OR THE LIST OF EMERGENCY EQUIPMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-66		EMERGENCY COORDINATOR; HAZARDOUS WASTE FACILITIES	AT ALL TIMES THERE SHOULD BE AT LEAST ONE EMPLOYEE EITHER ON THE PREMISES OR ON CALL TO COORDINATE ALL EMERGENCY RESPONSE MEASURES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-68	A-1	EMERGENCY PROCEDURES; HAZARDOUS WASTE FACILITIES	SPECIFIES THE PROCEDURES TO BE FOLLOWED IN THE EVENT OF AN EMERGENCY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-64-90		GROUND WATER PROTECTION; APPLICABILITY	ESTABLISHES CIRCUMSTANCES UNDER WHICH AN OPERATOR OF A HAZARDOUS WASTE FACILITY MUST IMPLEMENT A GROUND WATER PROTECTION PROGRAM OR A CORRECTIVE ACTION PROGRAM.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	LOCATION ACTION
3745-64-91	A	REQ GROUND WATER PROGRAMS FOR HAZ WASTE FACILITIES	PRESENTS THE GROUND WATER MONITORING AND RESPONSE PROGRAMS REQUIRED FOR HAZARDOUS WASTE LAND-BASED UNITS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-64-92		GROUND WATER PROTECTION STANDARD; HAZ WASTE FACILITIES	COMPLIANCE MUST BE ATTAINED WITH THE CONDITIONS SPECIFIED IN THE PERMIT TO ENSURE THAT HAZARDOUS CONSTITUENTS (SEE 3745-64-03) DO NOT EXCEED THE PROMULGATED LIMITS (SEE 3745-64-94).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-54-04	A, B	CONCENTRATION LIMITS FOR GROUND WATER; HAZ WASTE FAC	REQUIRES THAT PERMIT SPECIFY HAZARDOUS CONSTITUENTS TO WHICH THE GROUND WATER PROTECTION STANDARD OF 3745-54-02 APPLIES. HAZARDOUS CONSTITUENTS ARE CONSTITUENTS IDENTIFIED IN THE APPENDIX OF THIS RULE THAT HAVE BEEN DETECTED IN GROUND WATER IN THE UPPERMOST AQUIFER UNDERLYING THE UNIT(S) AND ARE REASONABLY EXPECTED TO BE IN OR DERIVED FROM WASTE CONTAINED IN THE UNIT(S). PRESENTS THE METHODOLOGY FOR DETERMINING CONCENTRATION LIMITS AND ALTERNATIVE CONCENTRATION LIMITS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-05	A, B	POINT OF COMPLIANCE FOR GROUND WATER; HAZ WASTE FACIL	ESTABLISHES POINT OF COMPLIANCE AT VERTICAL SURFACE LOCATED AT THE HYDRAULICALLY DOWNGRADIENT LIMIT OF THE WASTE MANAGEMENT AREA THAT EXTENDS DOWN INTO THE UPPERMOST AQUIFER UNDERLYING THE UNIT(S).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-08	A, B, C	COMPLIANCE PERIOD FOR GROUND WATER; HAZ WASTE FACIL	A COMPLIANCE PERIOD DURING WHICH THE GROUND WATER PROTECTION STANDARDS APPLY WILL BE SPECIFIED IN THE PERMIT. RULE REQUIRES THAT THE COMPLIANCE PERIOD FOR A FACILITY UNDERGOING A CORRECTIVE ACTION PROGRAM WILL EXTEND UNTIL IT CAN BE DEMONSTRATED THAT THE GROUND WATER PROTECTION STANDARD OF OAC 3745-54-02 HAS NOT BEEN EXCEEDED FOR A PERIOD OF THREE CONSECUTIVE YEARS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-07	A, H	GEN GROUND WATER MONITORING REQUIREMENTS; HAZ WASTE FAC	PRESENTS GENERAL GROUND WATER MONITORING PROGRAM REQUIREMENTS, INCLUDES NUMBER, LOCATION AND DEPTH OF WELLS, CASING REQUIREMENTS, SAMPLING AND ANALYSIS PROCEDURES, ETC.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-08	A, I	GROUND WATER DETECTION MONITORING PROG; HAZ WASTE FAC	PRESENTS REQUIREMENTS OF GROUND WATER DETECTION PROGRAM.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE NOT BEEN DETECTED IN THE GROUND WATER. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-08	A, J	GROUND WATER COMPLIANCE MONITORING PROG; HAZ WASTE FAC	PRESENTS REQUIREMENTS OF GROUND WATER COMPLIANCE MONITORING PROGRAM.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-01	A, F	GROUND WATER CORRECTIVE ACTION PROGRAM; HAZ WASTE FAC	PRESENTS THE REQUIREMENTS OF A GROUND WATER CORRECTIVE ACTION PROGRAM THAT PREVENTS HAZARDOUS CONSTITUENTS FROM EXCEEDING THEIR RESPECTIVE CONCENTRATION LIMITS AT THE COMPLIANCE POINT BY EITHER REMOVAL OR TREATMENT OF THESE HAZARDOUS CONSTITUENTS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-011	A, C	CORRECTIVE ACTION FOR WASTE MANAGEMENT UNITS	REQUIRES AN APPLICANT FOR A HAZARDOUS WASTE PERMIT TO INSTITUTE CORRECTIVE ACTION FOR ALL RELEASES OF HAZARDOUS WASTE OR CONSTITUENTS FROM ANY WASTE MANAGEMENT UNIT, REGARDLESS OF THE TIME AT WHICH WASTE WAS PLACED IN SUCH UNIT.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL

ADMINISTRATIVE CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	SITE NAME	COUNTY NAME	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-66-11	A, B, C	GENERAL CLOSURE PERFORMANCE STANDARD; HAZ WASTE FACIL			REQUIRES THAT ALL HAZARDOUS WASTE FACILITIES BE CLOSED IN A MANNER THAT MINIMIZES THE NEED FOR FURTHER MAINTENANCE, CONTROLS, MINIMIZES, ELIMINATES OR PREVENTS POST-CLOSURE ESCAPE OF HAZARDOUS WASTE, HAZARDOUS CONSTITUENTS, LEACHATE, CONTAMINATED RUN-OFF OR HAZARDOUS WASTE DECOMPOSITION PRODUCTS TO THE GROUND OR SURFACE WATER OR THE ATMOSPHERE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	ACTION
3745-66-12	B	CONTENT OF CLOSURE PLAN; HAZ WASTE FACILITIES			SPECIFIES THE MINIMUM INFORMATION REQUIRED IN A CLOSURE PLAN FOR OHIO EPA TO DETERMINE THE ADEQUACY OF THE PLAN.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	ACTION
3745-66-14		DISPOSAL/DECON OF EQUIPMENT, STRUCTURES & SOILS			REQUIRES THAT ALL CONTAMINATED EQUIPMENT, STRUCTURES AND SOILS BE PROPERLY DISPOSED OF OR DECONTAMINATED. REMOVAL OF HAZARDOUS WASTES OR CONSTITUENTS FROM A UNIT MAY CONSTITUTE GENERATION OF HAZARDOUS WASTES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	ACTION
3745-66-17	B	POST-CLOSURE CARE AND USE OF PROPERTY			SPECIFIES THE POST-CLOSURE CARE REQUIREMENTS, INCLUDING MAINTENANCE, MONITORING AND POST-CLOSURE USE OF PROPERTY.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-66-18	B	POST-CLOSURE PLAN			PRESENTS THE INFORMATION NECESSARY FOR OHIO EPA TO DETERMINE THE ADEQUACY OF A POST-CLOSURE PLAN.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-66-19	B	NOTICE TO LOCAL LAND AUTHORITY			REQUIRES THAT A RECORD OF THE TYPE, LOCATION AND QUANTITY OF HAZARDOUS WASTES DISPOSED OF IN EACH UNIT BE SUBMITTED TO THE LOCAL LAND AUTHORITY AND THE DIRECTOR OF THE OHIO EPA. ALSO REQUIRES THAT A NOTATION TO THE DEED TO THE FACILITY PROPERTY BE MADE INDICATING THAT THE LAND WAS USED TO MANAGE HAZARDOUS WASTES AND THAT CERTAIN USE RESTRICTIONS MAY APPLY TO THE PROPERTY.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-66-71		CONDITION OF CONTAINERS			CONTAINERS HOLDING HAZARDOUS WASTE MUST BE MAINTAINED IN GOOD CONDITION (NO RUST OR STRUCTURAL DEFECTS).	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-66-72		COMPATIBILITY OF WASTE WITH CONTAINERS			HAZARDOUS WASTES PLACED IN CONTAINER MUST NOT REACT WITH THE CONTAINER MATERIAL OR LINER MATERIAL.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-66-73		MANAGEMENT OF CONTAINERS			CONTAINERS HOLDING HAZARDOUS WASTE MUST BE CLOSED (EXCEPT TO ADD OR REMOVE WASTE) AND MUST NOT BE HANDLED IN A MANNER THAT MAY RUPTURE THE CONTAINER OR CAUSE IT TO LEAK.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-66-74		CONTAINER INSPECTIONS			REQUIRES AT LEAST WEEKLY INSPECTIONS OF CONTAINER STORAGE AREAS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-66-75	A, B, C, D	CONTAINER STORAGE AREA CONTAINMENT SYSTEM			REQUIRES THAT CONTAINER STORAGE AREAS HAVE A CONTAINMENT SYSTEM AND SPECIFIES THE MINIMUM REQUIREMENTS OF SUCH A SYSTEM.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-55-75		CONTAINER REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE OR REACTIVE WASTES THAT WILL BE STORED IN CONTAINERS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE OR IGNITABLE WASTES THAT ARE STORED, OR ARE TO BE STORED, IN CONTAINERS.	ACTION CHEMICAL
3745-55-77	A,B,C	CONTAINER REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH INCOMPATIBLE WASTES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE WASTES ARE PRESENT.	ACTION CHEMICAL
3745-55-78		CONTAINER CLOSURE REQUIREMENTS	SPECIFIES CLOSURE REQUIREMENTS FOR CONTAINERS AND CONTAINMENT SYSTEM.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-51	A-F	DESIGN & OPERATING REQUIREMENTS FOR WASTE PILES	SPECIFIES THE DESIGN AND OPERATION REQUIREMENTS FOR WASTE PILES. INCLUDES LINER SYSTEM, LEACHATE COLLECTION AND REMOVAL SYSTEM, WIND DISPERSAL PREVENTION AND RUN-ON/RUN-OFF CONTROL.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION
3745-55-54	A,B	MONITORING & INSPECTION OF WASTE PILES	WASTE PILES MUST BE MONITORED DURING CONSTRUCTION OR INSTALLATION AND OPERATION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION
3745-55-55	A,B	WASTE PILE REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTES THAT ARE STORED OR TREATED IN WASTE PILES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION CHEMICAL
3745-55-57	A,B,C	WASTE PILE REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTIALLY INCOMPATIBLE WASTES THAT ARE STORED OR TREATED IN WASTE PILES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION CHEMICAL
3745-55-58	A,B,C	CLOSURE & POST-CLOSURE CARE FOR WASTE PILES	SPECIFIES CLOSURE AND POST-CLOSURE CARE REQUIREMENTS FOR WASTE PILES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION
3745-55-59	A	CONSTRUCTION INSPECTIONS FOR WASTE PILES	ALLOWS OHIO EPA THE OPPORTUNITY TO INSPECT WASTE PILES DURING CONSTRUCTION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION
3745-55-60	A,B	SPECIAL REQUIREMENTS FOR "F" WASTES IN WASTE PILES	PROHIBITS THE PLACEMENT OF HAZARDOUS WASTES F020, F021, F022, F023, F02B AND F027 IN WASTE PILES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS F-WASTES WILL BE EITHER STORED OR TREATED IN WASTE PILES.	ACTION CHEMICAL
3745-57-01	A-D	ENVIRONMENTAL PERFORMANCE STANDARDS; LAND-BASED UNITS	SPECIFIES LOCATION, DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE AND CLOSURE REQUIREMENTS FOR LANDFILLS. WASTE PILES, SURFACE IMPOUNDMENTS AND UNDERGROUND INJECTION WELLS.	PERTAINS TO ALL SITES THAT EITHER HAVE OR WILL HAVE AT LEAST ONE OF THE FOLLOWING UNITS ON-SITE: LANDFILLS, WASTE PILES, SURFACE IMPOUNDMENTS, LAND TREATMENT FACILITIES AND UNDERGROUND INJECTION WELLS (THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION).	ACTION
3745-57-03	A-I	LANDFILL DESIGN AND OPERATING REQUIREMENTS	PRESENTS DESIGN AND OPERATING REQUIREMENTS FOR LANDFILLS. INCLUDES LINER, LEACHATE COLLECTION AND REMOVAL, RUN-ON/RUN-OFF CONTROL, ETC.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE ALSO PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-57-05	A,B	MONITORING AND INSPECTIONS OF LANDFILLS	REQUIRES INSPECTION OF LANDFILLS DURING CONSTRUCTION OR INSTALLATION AND OPERATION.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-57-10	A,B	LANDFILL CLOSURE AND POST-CLOSURE CARE	SPECIFIES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR HAZARDOUS WASTE LANDFILLS. INCLUDES FINAL COVER AND MAINTENANCE.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING	ACTION

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	COUNTY NAME	APPLICATION OF REGULATION	ARAR TYPE
3745-69-12	A,B	LANDFILL REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PROHIBITS THE DISPOSAL OF IGNITABLE OR REACTIVE WASTE IN A LANDFILL, UNLESS THE WASTE IS TREATED, RENDERED OR MIXED SO THAT THE RESULTANT MATERIAL NO LONGER MEETS THE DEFINITION OF IGNITABLE OR REACTIVE WASTE.		LAND-BASED AREAS OF CONTAMINATION. PERTAINS TO ALL SITES AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTE MAY BE LANDFILLED.	ACTION CHEMICAL
3745-69-13		LANDFILL REQUIREMENTS FOR INCOMPATIBLE WASTES	PROHIBITS THE DISPOSAL OF INCOMPATIBLE WASTE IN THE SAME CELL OF A LANDFILL.		PERTAINS TO ALL SITES AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTE MAY BE LANDFILLED.	ACTION CHEMICAL
3745-69-14	A,D	LANDFILL REQUIREMENTS FOR BULK & CONTAINERIZED LIQUIDS	THE PLACEMENT OF BULK OR NON-CONTAINERIZED LIQUID HAZARDOUS WASTE OR HAZARDOUS WASTES CONTAINING FREE LIQUIDS (WHETHER OR NOT ABSORBANTS HAVE BEEN ADDED) IN ANY LANDFILL IS PROHIBITED.		PERTAINS TO ALL SITES AT WHICH A LIQUID HAZARDOUS WASTE OR HAZARDOUS WASTE CONTAINING FREE LIQUIDS ARE CONSIDERED FOR LANDFILLING.	ACTION CHEMICAL
3745-69-15	A,B	LANDFILL REQUIREMENTS FOR CONTAINERS	UNLESS THEY ARE VERY SMALL, CONTAINERS MUST EITHER BE AT LEAST 80% FULL WHEN PLACED IN THE LANDFILL OR CRUSHED/SHREDDED PRIOR TO PLACEMENT IN THE LANDFILL.		PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND CONTAINERS ARE TO BE DISPOSED OF IN THE LANDFILL.	ACTION CHEMICAL
3745-69-18	A,E	DISPOSAL OF SMALL CONTAINERS OF HAZ WASTES IN OVERPACKS	LAB PACKS CONTAINING HAZARDOUS WASTE MAY BE PLACED IN A LANDFILL IF CERTAIN REQUIREMENTS ARE MET.		PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND LAB PACKS ARE TO BE PLACED IN THE LANDFILL.	ACTION CHEMICAL
3745-69-19	A	LANDFILL CONSTRUCTION INSPECTIONS	ALLOWS OHIO EPA OPPORTUNITY TO INSPECT LANDFILL DURING CONSTRUCTION.		PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL
3745-69-20	A,B	SPECIAL REQUIREMENTS FOR "F" WASTES IN LANDFILLS	PROHIBITS THE PLACEMENT OF HAZARDOUS WASTES F020, F021, F022, F023, F028 AND F027 IN LANDFILLS.		PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND F-WASTES ARE BEING CONSIDERED FOR LANDFILLING.	ACTION CHEMICAL
3745-69-03	A,B	DILUTION PROHIBITED AS A SUBSTITUTE FOR TREATMENT	PROHIBITS DILUTION OF A RESTRICTED WASTE OR THE RESIDUAL FROM TREATMENT OF A RESTRICTED WASTE AS A SUBSTITUTE FOR ADEQUATE TREATMENT IN ORDER TO LAND DISPOSE HAZARDOUS WASTE. DILUTION OF WATER WASTES IS NOT IMPERMISSIBLE DILUTION UNLESS A METHOD HAS BEEN SPECIFIED AS A TREATMENT STANDARD.		PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES DISPOSAL OF HAZARDOUS WASTE ON-SITE.	ACTION CHEMICAL
3745-69-07	A,B,C	WASTE ANALYSIS OF HAZARDOUS WASTE	GENERATOR SHALL TEST THE WASTE OR TEST AN EXTRACT OF THE WASTE ACCORDING TO THE FREQUENCY AND TEST METHODS DESCRIBED IN THE RULES, TO DETERMINE IF THE WASTE IS RESTRICTED FROM LANDFILL DISPOSAL.		PERTAINS TO AN ALTERNATIVE THAT INCORPORATES DISPOSAL OF HAZARDOUS WASTE ON-SITE.	ACTION CHEMICAL
3745-69-08	B,C	SPECIAL RULES REGARDING WASTE THAT EXHIBIT A CHARACTERISTIC	PROHIBITS LAND DISPOSAL OF CHARACTERISTIC WASTE UNLESS THE WASTE COMPLIES WITH THE TREATMENT STANDARDS OF LISTED WASTES. IF THE WASTE IS BOTH LISTED AND EXHIBITS A CHARACTERISTIC, THE TREATMENT STANDARD FOR THE LISTED WASTE WILL OPERATE IN LIEU OF THE STANDARD FOR THE CHARACTERISTIC WASTE.		PERTAINS TO ANY SITE IN WHICH ON-SITE DISPOSAL OF HAZARDOUS WASTE IS AN ALTERNATIVE.	ACTION CHEMICAL
3745-69-50	A,B,C,D,E	PROHIBITION ON STORAGE OF RESTRICTED WASTE	PROHIBITS ON-SITE STORAGE OF HAZARDOUS WASTES RESTRICTED FROM LAND DISPOSAL BEYOND A SPECIFIED TIME FRAME STATED IN THE RULE.		PERTAINS TO ANY SITE IN WHICH STORAGE OF HAZARDOUS WASTE WILL OCCUR ON SITE TO FACILITATE PROPER RECOVERY, TREATMENT OR DISPOSAL. IN SOME CASES STORAGE OF	ACTION CHEMICAL

SITE NAME COUNTY NAME

ADMINIS. CODE SECTION	PERTINENT PARAGRAPHS	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-81-11	A,B,C	MAXIMUM CONTAMINANT LEVELS FOR INORGANIC CHEMICALS	PRESENTS MAXIMUM CONTAMINANT LEVELS FOR INORGANICS.	RESTRICTED WASTES BEYOND ONE YEAR IS ALLOWED. PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-12	A,B,C	MAXIMUM CONTAMINANT LEVELS FOR ORGANIC CHEMICALS	PRESENTS MCLs FOR ORGANICS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-16	A,B	MAX CONTAMINANT LEVELS FOR RADIUM 226,228,GROSS ALPHAS	PRESENTS MCLs FOR RADIUM-226, RADIUM-228 AND GROSS ALPHA PARTICLE ACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-26	A,B,C	MONITORING FREQUENCY FOR RADIOACTIVITY	PRESENTS MONITORING REQUIREMENTS FOR RADIOACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-27	A,E	ANALYTICAL TECHNIQUES	PRESENTS GENERAL ANALYTICAL TECHNIQUES FOR MCLs.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-8-04	A,B	LOCATION/SITING OF NEW GW WELLS	MANDATES THAT GROUND WATER WELLS BE: A) LOCATED AND MAINTAINED SO AS TO PREVENT CONTAMINANTS FROM ENTERING WELL. B) LOCATED SO AS TO BE ACCESSIBLE FOR CLEANING AND MAINTENANCE.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1976. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	LOCATION ACTION
3745-8-05	A,1,8-11	CONSTRUCTION OF NEW GW WELLS	SPECIFIES MINIMUM CONSTRUCTION REQUIREMENTS FOR NEW GROUND WATER WELLS IN REGARDS TO CASING MATERIAL, CASING DEPTH, POTABLE WATER, ANNULAR SPACES, USE OF DRIVE SHOES, OPENINGS TO ALLOW WATER ENTRY, CONTAMINANT ENTRY.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1976. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-8-08	A,B,D,E	CASING REQUIREMENTS FOR NEW GW WELLS	ESTABLISHES SPECIFIC REQUIREMENTS FOR WELL CASINGS, SUCH AS SUITABLE MATERIAL, DIAMETERS AND CONDITION.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1976. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-8-07	A,F	SURFACE DESIGN OF NEW GW WELLS	ESTABLISHES SPECIFIC SURFACE DESIGN REQUIREMENTS, SUCH AS HEIGHT ABOVE GROUND, WELL VENTS, WELL PUMPS, ETC.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1976. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-8-08	A,C	START-UP & OPERATION OF GW WELLS	REQUIRE DISINFECTION OF NEW WELLS AND USE OF POTABLE WATER FOR PRIMING PUMPS.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1976. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-8-06	A-C,D1,E-G	MAINTENANCE & OPERATION OF GW WELLS	ESTABLISHES SPECIFIC MAINTENANCE AND MODIFICATION REQUIREMENTS FOR CASING, PUMP AND WELLS IN GENERAL.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1976. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-8-10	A,B,C	ABANDONMENT OF TEST HOLES & GW WELLS	FOLLOWING COMPLETION OF USE, WELLS AND TEST HOLES SHALL BE COMPLETELY FILLED WITH GROUT OR SIMILAR MATERIAL OR SHALL BE	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB.	ACTION

SITE NAME COUNTY NAME

ADMINIS- CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE

MAINTAINED IN COMPLIANCE OF ALL REGULATIONS.

16, 1976.



SITE NAME COUNTY NAME

REVISED CODE SECTION	PARTICULAR PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
1618.02		ENDANGERED PLANT SPECIES	Prohibits removal or destruction of endangered plant species (some private property exceptional).	Applies to remediation sites where chemicals may harm endangered species. Clearly establishes that receptor plant species must be considered in risk assessments. This act may require consideration of endangered species in remediations that involve movement or displacement of large volumes of surface soil.	
3704.05	(A)	PROHIBITS VIOLATION OF AIR POLLUTION CONTROL RULES	PROHIBITS EMISSION OF AN AIR CONTAMINANT IN VIOLATION SEC. 3704 OR ANY RULES, PERMIT, ORDER OR VARIANCE ISSUED PURSUANT TO THAT SECTION OF THE ORC.	MAY PERTAIN TO ANY SITE WHERE EMISSIONS OF AN AIR CONTAMINANT OCCURS EITHER AS A PRE-EXISTING CONDITION OF THE SITE OR AS A RESULT OF REMEDIAL ACTIVITIES. SHOULD BE CONSIDERED FOR VIRTUALLY ALL SITES.	CHEMICAL ACTION
3731.02	(G)	EXEMPTIONS TO SOLID & HAZ. WASTE T/S/D REQUIREMENTS	PROVIDES AUTHORITY AND CONDITIONS BY WHICH THE DIRECTOR MAY EXEMPT ANY PERSON FROM PERMITTING OR OTHER REQUIREMENTS GOVERNING THE GENERATION, STORAGE, TREATMENT, TRANSPORT OR DISPOSAL OF SOLID OR HAZARDOUS WASTE.	PERTAINS TO ANY SITE AT WHICH SOLID OR HAZARDOUS WASTE HAS COME TO BE LOCATED. CERTAIN ALTERNATIVES INCLUDE EXCAVATION ACTIVITIES WHICH MAY UNCOVER SOLID AND/OR HAZARDOUS WASTE. SHOULD THOSE ACTIVITIES REQUIRE THE MANAGEMENT OF SOLID/HAZARDOUS WASTES ON-SITE, AN EXEMPTION TO PERMITTING AND OTHER REQUIREMENTS MAY BE WARRANTED.	ACTION
3734.02	(H)	"DIGGING" WHERE HAZ OR SOLID WASTE FACILITY WAS LOCATED	FILLING, GRADING, EXCAVATING, BUILDING, DRILLING OR MINING ON LAND WHERE HAZARDOUS WASTE OR SOLID WASTE FACILITY WAS OPERATED IS PROHIBITED WITHOUT PRIOR AUTHORIZATION FROM THE DIRECTOR OF THE OHIO EPA.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS OR SOLID WASTE HAS COME TO BE LOCATED. CERTAIN ALTERNATIVES INCLUDE EXCAVATION ACTIVITIES WHICH MAY UNCOVER SOLID AND/OR HAZARDOUS WASTE. SHOULD THOSE ACTIVITIES REQUIRE THE MANAGEMENT OF SOLID/HAZARDOUS WASTES ON-SITE, AN EXEMPTION TO PERMITTING AND OTHER REQUIREMENTS MAY BE WARRANTED.	LOCATION ACTION
3734.02	(I)	AIR EMISSIONS FROM HAZARDOUS WASTE FACILITIES	NO HAZARDOUS WASTE FACILITY SHALL EMIT ANY PARTICULATE MATTER, DUST, FUMES, GAS, MIST, SMOKE, VAPOR OR ODOROUS SUBSTANCE THAT INTERFERES WITH THE COMFORTABLE ENJOYMENT OF LIFE OR PROPERTY OR IS INJURIOUS TO PUBLIC HEALTH.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE MANAGED SUCH THAT AIR EMISSIONS MAY OCCUR. CONSIDER FOR SITES THAT WILL UNDERGO MOVEMENT OF EARTH OR INCINERATION.	
734.03		PROHIBITS OPEN DUMPING OR BURNING	PROHIBITS OPEN BURNING OR OPEN DUMPING OF SOLID WASTE OR TREATED OR UNTREATED INFECTIOUS WASTE.	PERTAINS TO ANY SITE AT WHICH SOLID WASTE HAS COME TO BE LOCATED OR WILL BE GENERATED DURING A REMEDIAL ACTION.	LOCATION
734.04.1	A, C, D, G	EXPLOSIVE GAS MONITORING	REQUIRES EXPLOSIVE GAS MONITORING PLANS FOR SANITARY LANDFILLS AND PROVIDES AUTHORITY TO THE DIRECTOR OF OHIO EPA TO ORDER AN OWNER OR OPERATOR OF A FACILITY TO IMPLEMENT AN EXPLOSIVE GAS MONITORING AND REPORTING PLAN	PERTAINS TO ALL SANITARY LANDFILLS EXCEPT FOR THOSE THAT DISPOSED OF NONPUTRESCIBLE WASTES.	LOCATION ACTION
734.05	(D)(a)(c)	HAZARDOUS WASTE FACILITY ENVIRONMENTAL IMPACT	A HAZARDOUS WASTE FACILITY INSTALLATION AND OPERATION PERMIT SHALL NOT BE APPROVED UNLESS IT PROVES THAT THE FACILITY REPRESENTS THE MINIMUM ADVERSE ENVIRONMENTAL IMPACT, CONSIDERING THE STATE OF AVAILABLE TECHNOLOGY, THE NATURE AND ECONOMICS OF VARIOUS ALTERNATIVES AND OTHER PERTINENT CONSIDERATIONS.	PERTAINS TO ALL SITES AT WHICH HAZARDOUS WASTE HAS COME TO BE LOCATED AND/OR AT WHICH HAZARDOUS WASTE WILL BE TREATED, STORED OR DISPOSED OF. MAY FUNCTION AS SITING CRITERIA.	
734.05	(D)(b, d, g, h)	HAZARDOUS WASTE SITING CRITERIA	(D), 8, d. A HAZARDOUS WASTE FACILITY INSTALLATION AND OPERATION PERMIT SHALL NOT BE APPROVED UNLESS IT PROVES THAT THE FACILITY REPRESENTS THE MINIMUM RISK OF ALL OF THE FOLLOWING: (i) CONTAMINATION OF GROUND AND SURFACE WATERS (ii) FIRES OR EXPLOSIONS FROM TREATMENT, STORAGE OR DISPOSAL	PERTAINS TO ALL SITES AT WHICH HAZARDOUS WASTE HAS COME TO BE LOCATED AND/OR AT WHICH HAZARDOUS WASTE WILL BE TREATED, STORED OR DISPOSED OF. MAY FUNCTION AS SITING CRITERIA.	ACTION

SITE NAME COUNTY NAME

REVISED CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	COUNTY NAME	APPLICATION OF REGULATION	ARAR TYPE
			<p>METHODS</p> <p>(iii) ACCIDENT DURING TRANSPORTATION</p> <p>(iv) IMPACT ON PUBLIC HEALTH AND SAFETY</p> <p>(v) AIR POLLUTION</p> <p>(vi) SOIL CONTAMINATION</p> <p>(d), g, h. PROHIBITS THE FOLLOWING LOCATIONS FOR TREATMENT, STORAGE AND DISPOSAL OF ACUTE HAZARDOUS WASTE:</p> <p>(i) WITHIN 2000 FEET OF ANY RESIDENCE, SCHOOL, HOSPITAL, JAIL OR PRISON;</p> <p>(ii) ANY NATURALLY OCCURRING WETLAND</p> <p>(iii) ANY FLOOD HAZARD AREA</p> <p>(iv) WITHIN ANY STATE PARK OR NATIONAL PARK OR RECREATION AREA</p>			
397.13		PROHIBITION OF NUISANCES	PROHIBITS NOXIOUS EXHALATIONS OR SMELLS AND THE OBSTRUCTION OF WATERWAYS.		PERTAINS TO ANY SITE THAT MAY HAVE NOXIOUS SMELLS OR MAY OBSTRUCT WATERWAYS.	ACTION CHEMICAL
787.14		PROHIBITION OF NUISANCES	PROHIBITION AGAINST THROWING REFUSE, OIL, OR FILTH INTO LAKES, STREAMS, OR DRAINS.		PERTAINS TO ALL SITES LOCATED ADJACENT TO LAKES, STREAMS, OR DRAINS.	ACTION CHEMICAL
101.19		CONSERVANCY DISTRICTS	BOARD OF DIRECTORS OF A CONSERVANCY DISTRICT MAY MAKE AND ENFORCE RULES AND REGULATIONS PERTAINING TO CHANNELS, DITCHES, PIPES, SEWERS, ETC.		THIS STATUTE PERTAINS TO ANY SITE THAT MAY AFFECT A CONSTRUCTION WITHIN A CONSERVANCY DISTRICT.	ACTION
111.04.2		ACTS OF POLLUTION PROHIBITED	POLLUTION OF WATERS OF THE STATE IS PROHIBITED.		PERTAINS TO ANY SITE WHICH HAS CONTAMINATED ON-SITE GROUND OR SURFACE WATER OR WILL HAVE A DISCHARGE TO ON-SITE SURFACE OR GROUND WATER.	ACTION
111.04.2		RULES REQUIRING COMPLIANCE WITH NATIONAL EFFLUENT STANDARDS	ESTABLISHES REGULATIONS REQUIRING COMPLIANCE WITH NATIONAL EFFLUENT STANDARDS.		PERTAINS TO ANY SITE WHICH WILL HAVE A POINT SOURCE DISCHARGE.	ACTION
111.07	A.C	WATER POLLUTION CONTROL REQUIREMENTS - DUTY TO COMPLY	PROHIBITS FAILURE TO COMPLY WITH REQUIREMENTS OF SECTIONS 8111.01 TO 8111.08 OR ANY RULES, PERMIT OR ORDER ISSUED UNDER THOSE SECTIONS.		PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND WATER OR SURFACE WATER OR WILL HAVE A DISCHARGE TO ON-SITE SURFACE OR GROUND WATER.	ACTION

APPENDIX D
LIST OF ACRONYMS



List of Acronyms

AOC:	Administrative Order on Consent
ARARs:	Applicable or Relevant and Appropriate Requirements
Bedford:	Bedford Shale
BERA:	Baseline Ecological Risk Assessment
BRA:	Baseline Risk Assessment
BRC:	Big Run Creek
CD:	Consent Decree
CERCLA :	Comprehensive Environmental Response, Compensation and Liability Act
Ci/hr:	Curies per hour
cm ² /sec:	Square centimeters per second
CMS:	Corrective Measure Study
CAS:	Corrective Action Study
COC:	Chemicals of Concern
Cuyahoga:	Cuyahoga Shale
DOCC:	Description of Current Conditions
ED:	Exposure Duration
MMES:	Martin Marietta Energy Systems
ft ² :	Square Foot
ft ³ :	Cubic Foot
ft/d:	Feet per Day
ft ² /d:	Square Feet per Day
ft ³ /d:	Cubic Feet per Day
Gallia:	Gallia Sand and Gravel
gal/month:	Gallons per month
gal/yr:	Gallons per year
GC:	Gas chromatograph
GCEP:	Gaseous Centrifuge Enrichment Plant
gpd:	Gallons per Day
gpm:	Gallons per minute
HSWA:	Hazardous and Solid Waste Amendments
in/yr:	Inches per year
IRM:	Interim Remedial Measure
kg/yr:	Kilograms per Year
lbs:	Pounds
LBC:	Little Beaver Creek
m ³ /day:	Cubic meters per day
MCL:	Maximum Contaminant Level
mg/l:	Milligrams per Liter

mg/kg:	Milligrams per Kilograms
mg/m ³ :	Milligrams per cubic meter
mgd:	Million gallons per day
Minford:	Minford clay and silt
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan
ND:	Not Detected
NDD:	North Drainage Ditch
NEDD:	North East Drainage Ditch
NPDES:	National Pollution Discharge Elimination System
O&M:	Operation & Maintenance
OEPA:	Ohio Environmental Protection Agency
PAHs:	Polynuclear Aromatic Hydrocarbons
PCBs:	Polychlorinated Biphenyls
PCE:	Perchloroethylene
pCi/l:	Picocuries per Liter
PERA:	Preliminary Ecological Risk Assessment
PK:	Peter Kiewit
PORTS:	Portsmouth Gaseous Diffusion Plant
ppb:	parts per billion
ppm:	parts per million
PQL:	Practical Quantitation Limit
QI:	Quadrant I
RCRA:	Resource Conservation and Recovery Act
RFI:	RCRA Facility investigation
RME:	Reasonable Maximum Exposure
ROD:	Record of Decision
SARA:	Superfund Amendments and Reauthorization Act
SCS:	Seep Collection System
Sunbury:	Sunbury Shale
SVOCs:	Semivolatile Organic Compounds
SWMUs:	Solid Waste Management Unit
Tc:	Technetium
TCE:	Trichloroethylene
ug/hr:	Micrograms per hour
ug/kg:	Micrograms per kilogram
ug/l:	Micrograms per liter
ug/m ³ :	Micrograms per cubic meter
USDOE:	United States Department of Energy
USEPA:	United States Environmental Protection Agency
VOCs:	Volatile organic compounds

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Pike County, Ohio

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