BEFORE THE

OHIO ENVIRONMENTAL PROTECTION AGENCY

OHIO E.P.A.
DEC -5 94
ENTERED DIRECTOR'S JOURNAL

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| In the Matter of: | : | |
| The Goodyear Tire & Rubber Company<br>1144 East Market Street<br>Akron, Ohio 44316 | : | Director's Final Findings and Orders |
| Respondent | : | |

## PREAMBLE

It is hereby agreed to by and among the Parties as follows:

## I. JURISDICTION

1. These Director's Final Findings and Orders are issued pursuant to the authority vested in the Director of the Ohio EPA under Sections 3734.13, 3734.20, 6111.03, and 3745.01 of the Ohio Revised Code. Respondent consents to and agrees not to contest Ohio EPA's jurisdiction to issue and enforce these Orders.

## II. PARTIES BOUND

2. These Orders shall apply to and be binding upon Respondent, its agents, successors, and assigns.

3. No change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall in any way alter Respondent's obligations under these Orders.

4. Respondent shall provide a copy of these Orders to all contractors, subcontractors, laboratories and consultants retained to perform any portion of the Work performed pursuant to these Orders. Respondent shall ensure that all contractors, subcontractors, laboratories and consultants retained to perform Work pursuant to these Orders comply with the provisions of these Orders.

5. The signatories to these Orders certify that they are fully authorized to execute and legally bind the Party they represent.

## III. DEFINITIONS

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By: June Covert Date 12-5-94

6. Unless otherwise expressly provided herein, terms used in these Orders or in any appendices shall have the same meaning as used in Chapters 3734 and 6111 of the Ohio Revised Code. Whenever the terms listed below are used in these Orders or in any appendices, attached hereto and incorporated herein, the following definitions shall apply:

a. "Day" shall mean a calendar day unless expressly stated to be a business day. "Business day" shall mean a day other than a Saturday, Sunday, or State Holiday. In computing any period of time under these Orders, where the last day would fall on a Saturday, Sunday, or State Holiday, the period shall run until the close of the next business day.

b. "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan, codified at 40 C.F.R. Part 300 (1990), as amended.

c. "Ohio EPA" shall mean the Ohio Environmental Protection Agency and its designated representatives.

d. "Paragraph" shall mean a portion of these Orders identified by an arabic numeral or an upper or lower case letter.

e. "Parties" shall mean Respondent and the Ohio EPA.

f. "Remedial Investigation and Feasibility Study Work Plan" ("RI/FS Work Plan") shall mean the document submitted by Respondent pursuant to Paragraph 12 of these Orders.

g. "Respondent" shall mean The Goodyear Tire & Rubber Company. "Goodyear" shall mean The Goodyear Tire & Rubber Company and/or its subsidiary, Goodyear Aerospace Corporation.

h. "Response Costs" shall mean all costs including, but not limited to, payroll costs, contractor costs, travel costs, oversight costs, laboratory costs, and the costs of reviewing or developing plans, reports, and other items pursuant to these orders, verifying the Work, or otherwise implementing or enforcing these Orders.

i. "Section" shall mean a portion of these Orders identified by a roman numeral.

j. "Site" shall mean the former, undefined Goodyear disposal area, located at and in the vicinity of the Upper Tuscarawas Wastewater Treatment Plant, described more particularly in the attached map, where the treatment, storage, and/or disposal of hazardous waste, and/or the discharge into waters of the state of industrial waste or other waste has occurred, including any other area where such hazardous wastes, industrial wastes, and/or other wastes may have migrated.

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k. "Statement of Work" ("SOW") means the statement of work for the implementation of the Remedial Investigation and Feasibility Study at the Site, as set forth in Appendix A to these Orders. The SOW is not specific to this Site, and shall be used as an outline in developing Site-specific work plans.

l. "Waste Material" shall mean (1) any "hazardous waste" under Section 3734.01(J) of the Ohio Revised Code; (2) any "solid waste" under Section 3734.01(E) of the Ohio Revised Code; (3) any "industrial waste" under Section 6111.01(C) of the Ohio Revised Code; and (4) any "other waste" under Section 6111.01(D) of the Ohio Revised Code.

m. "Work" shall mean all activities Respondent is required to perform under these Orders.

## IV. FINDINGS OF FACT, DETERMINATIONS, AND CONCLUSIONS OF LAW

7. All findings of fact, determinations, and conclusions of law necessary for the issuance of these Orders pursuant to Sections 3734.20, 3734.13, 3745.01 and 6111.03 of the Revised Code have been made and are outlined below. Ohio EPA has determined the following:

a. From 1919 to 1955, the Rubber City Sand & Gravel Company owned an approximately 306 acre parcel of land, which is presently bordered on the north by Krumroy Road, on the east by Pickle Road, on the south by Killian Road, and on the west by Arlington Road in Summit County, Ohio. The Rubber City Sand and Gravel Company sold this property to a trust consisting of Diamond Crystal Salt Co., the Babcock & Wilcox Company, the B.F. Goodrich Company, the Firestone Tire & Rubber Company, and the Pittsburgh Plate Glass Co. in 1955. In 1978, the trust sold a 94 acre parcel of this property to Summit County for the construction of a wastewater treatment plant.

b. From approximately 1943 to 1955, the Rubber City Sand and Gravel Company leased an undefined portion of its property to the Goodyear Aircraft Corporation for the disposal of waste material. After the Rubber City Sand & Gravel Company sold its property to the trust in 1955, the trust continued to lease the property to The Goodyear Aircraft Corporation for waste disposal until approximately 1966. In 1966, the Akron-Baberton Air Pollution Control Agency ordered that waste disposal at the site cease due to complaints from nearby residents of noxious fumes.

c. In 1981, the Goodyear Aerospace Corporation (formerly known as Goodyear Aircraft Corporation) submitted a Notification of Hazardous Waste Site activity form to U.S. EPA admitting that from 1945 to 1965 Goodyear dumped solvents, heavy metals, plating/polishing wastes, and cyanides at the former Rubber City Sand & Gravel property.

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d. Aerial photographs of the former Rubber City Sand & Gravel facility taken in 1938, 1951, 1959, and 1966 reveal a triangular area, devoid of vegetation and approximately 7.5 acres large, where it is believed that Goodyear dumped its wastes. Summit County's Upper Tuscarawas Wastewater Treatment Plant is presently located on at least a portion of this waste disposal area.

e. Sample results taken by U.S. EPA in July of 1992, at and in the vicinity of the Goodyear waste disposal area, revealed the presence of vinyl chloride at up to 130 ug/l and trichloroethene at up to 50 ug/l in the ground water, Aroclor 1248 at up to 320 ug/kg and Aroclor 1260 at up to 210 ug/kg in the sediment, and 2-butanone at up to 67 ug/kg in the soil.

f. Vinyl chloride is a known carcinogen, and Aroclor 1248 and Aroclor 1260 are suspected carcinogens according to the Integrated Risk Information System. The Maximum Contaminant Levels (MCLs) for vinyl chloride and trichloroethene are 2 ug/l and 5 ug/l respectively.

g. The Goodyear waste disposal area is located above the Tuscarawas River Buried Valley aquifer, a sand and gravel aquifer which serves as a major source of drinking water for residents in the area. Drinking water is obtained from private wells and a ground water based municipal well system located within a 4 mile radius of the Goodyear disposal area.

h. Respondent is a "person" as defined under Section 3734.01(G) of the Ohio Revised Code.

i. Because of their quantity, concentration, or physical or chemical characteristics, the Director has determined that vinyl chloride, trichloroethene, Aroclor 1248 and 1260, 2-butanone, and other contaminants found at the Site are "hazardous wastes" as defined under Section 3734.01(J) of the Ohio Revised Code.

j. The Site is a hazardous waste facility, solid waste facility, or other location where hazardous waste was treated, stored, or disposed.

k. Conditions at the Site constitute a substantial threat to public health or safety or are causing or contributing or threatening to cause or contribute to air or water pollution or soil contamination.

l. Respondent is a "person" as defined under Section 6111.01(I) of the Ohio Revised Code.

m. Vinyl chloride, trichloroethene, Aroclor 1248 and 1260, 2-butanone, and other contaminants found at the Site are

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"industrial wastes" or "other wastes" as defined under Section 6111.01 of the Ohio Revised Code.

n. The ground and surface waters at the Site are "waters of the state" as defined under Section 6111.01(H) of the Ohio Revised Code.

o. The Work required by these Orders will contribute to the prohibition or abatement of the discharge of industrial wastes or other wastes into the waters of the state.

p. In issuing these Orders, the Director has given consideration to, and based his determination on, evidence relating to the technical feasibility and economical reasonableness of complying with these Orders and to evidence relating to conditions calculated to result from compliance with these Orders, and their relation to benefits to the people of the state to be derived from such compliance.

## V. GENERAL PROVISIONS

8. Objectives of the Parties

The objectives of the Parties in entering into these Orders are to protect public health, safety, and welfare and the environment from the disposal, discharge, or release of Waste Material at the Site through the development of a Remedial Investigation and Feasibility Study by Respondent.

9. Commitment of Respondent

Respondent shall perform the Work in accordance with these Orders, including but not limited to, the SOW, relevant guidance documents listed in Appendix B hereto, and all standards, specifications, and schedules set forth in or developed pursuant to these Orders. Respondent shall also reimburse Ohio EPA for response costs as provided in these Orders.

10. Compliance With Law

a. All activities undertaken by Respondent pursuant to these Orders shall be performed in accordance with the requirements of all applicable federal and state laws and regulations.

b. Respondent shall perform the activities required pursuant to these Orders in a manner which is consistent with the NCP. The Ohio EPA believes that activities conducted pursuant to these Orders, if approved by the Ohio EPA, shall be considered to be consistent with the NCP.

c. Where any portion of the Work requires a permit or approval, Respondent shall timely submit applications and take all

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other actions necessary to obtain such permits or approval. These Orders are not, and shall not be construed to be, a permit issued pursuant to any statute or regulation.

## VI. PERFORMANCE OF THE WORK BY RESPONDENT

11. Supervising Contractor

All Work performed pursuant to these Orders shall be under the direction and supervision of a supervising contractor with expertise in hazardous waste site investigation and remediation. Prior to the initiation of the Work, Respondent shall notify Ohio EPA in writing of the name of the supervising contractor and any subcontractor to be used in carrying out the terms of these Orders.

12. Remedial Investigation and Feasibility Study

a. Within thirty (30) days after the effective date of these Orders, Respondent shall submit to Ohio EPA a work plan for implementation of the Remedial Investigation and Feasibility Study for the Site ("Remedial Investigation and Feasibility Study Work Plan or RI/FS Work Plan"). The RI/FS Work Plan shall provide for the determination of the nature and extent of the contamination of the Site caused by the disposal, discharge, or release of Waste Material, and for the development and evaluation of remedial alternatives for the cleanup of the Site.

b. The RI/FS Work Plan shall be developed in conformance with the SOW and the guidance documents listed in Appendix B to these Orders, attached hereto and incorporated herein. If Ohio EPA determines that any additional or revised guidance documents affect the Work to be performed in implementing the Remedial Investigation and Feasibility Study, Ohio EPA will notify Respondent, and the RI/FS Work Plan and other affected documents shall be modified in accordance with the provisions of these Orders.

c. Ohio EPA will review the RI/FS Work Plan pursuant to the procedures set forth in Section XII, Review of Submittals. Upon approval of the RI/FS Work Plan by Ohio EPA, Respondent shall implement the RI/FS Work Plan. Respondent shall submit all plans, reports, or other deliverables required under the approved RI/FS Work Plan, in accordance with the approved schedule, for review and approval pursuant to Section XII, Review of Submittals.

d. Within seven (7) days of the effective date of these Orders, Respondent shall meet with the Ohio EPA to discuss the requirements of the RI/FS Work Plan.

## VII. ADDITIONAL WORK

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13. Ohio EPA or Respondent may determine that in addition to

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the tasks defined in the approved RI/FS Work Plan, additional work may be necessary to accomplish the objectives of these Orders as set forth in Paragraph 8 of these Orders and the SOW.

14. Within ten (10) days of receipt of written notice from Ohio EPA that additional work is necessary to accomplish the objectives of these Orders as set forth in paragraph 8 of these Orders and the SOW, Respondent shall meet with the Ohio EPA to discuss said additional work request. Within thirty (30) days of of receipt of said additional work request, Respondent shall submit a work plan for the performance of the additional work. The work plan shall conform to the standards and requirements set forth in Paragraph 12.b. of these Orders. Upon approval of the work plan by Ohio EPA pursuant to Section XII, Review of Submittals, Respondent shall implement the work plan for additional work in accordance with the schedules contained therein.

15. In the event that Respondent determines that additional work is necessary, Respondent shall submit a written request to Ohio EPA explaining the need for and detailing the nature of additional work prior to performing additional work. Ohio EPA shall review Respondent's request to perform additional work pursuant to Section XII, Review of Submittals. Upon approval of Respondent's request by Ohio EPA, Respondent shall perform the additional work in accordance with the plans, specifications, and schedules approved by Ohio EPA.

## VIII. SAMPLING AND DATA AVAILABILITY

16. Respondent shall notify Ohio EPA not less than thirty (30) days in advance of all sample collection activity. Upon request, Respondent shall allow split and/or duplicate samples to be taken by Ohio EPA. Ohio EPA shall also have the right to take any additional samples it deems necessary. Upon request, Ohio EPA shall allow Respondent to take split and/or duplicate samples of any samples Ohio EPA takes as part of its oversight of Respondent's implementation of the Work.

17. Within seven (7) days of a request by Ohio EPA, Respondent shall submit to Ohio EPA copies of the results of all sampling and/or tests or other data, including raw data and original laboratory reports, generated by or on behalf of Respondent with respect to the Site and/or the implementation of these Orders. Respondent may submit to Ohio EPA any interpretive reports and written explanations concerning the raw data and original laboratory reports. Such interpretive reports and written explanations shall not be submitted in lieu of original laboratory reports and raw data. Should Respondent subsequently discover an error in any report or raw data, Respondent shall promptly notify Ohio EPA of such discovery and provide the correct information.

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## IX. ACCESS



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18. Ohio EPA shall have access at all times to the Site and any other property to which access is required for the implementation of these Orders, to the extent access to the property is controlled by Respondent. Access under these Orders shall be for the purposes of conducting any activity related to these Orders including, but not limited to the following:

a. Monitoring the Work;

b. Conducting sampling;

c. Inspecting and copying records, operating logs, contracts, and/or other documents related to the implementation of these Orders;

d. Conducting investigations and tests related to the implementation of these Orders; and

e. Verifying any data and/or other information submitted to Ohio EPA.

19. To the extent that the Site or any other property to which access is required for the implementation of these Orders is owned or controlled by persons other than Respondent, Respondent shall use its best efforts to secure from such persons access for Respondent and the Ohio EPA as necessary to effectuate these Orders. Copies of all access agreements obtained by Respondent shall be provided promptly to Ohio EPA. If any access required to effectuate these Orders is not obtained within thirty (30) days of the effective date of these Orders, or within thirty (30) days of the date Ohio EPA notifies Respondent in writing that additional access beyond that previously secured is necessary, Respondent shall promptly notify the Ohio EPA in writing of the steps Respondent has taken to attempt to obtain access. Ohio EPA may, as it deems appropriate, assist Respondent in obtaining access.

20. Notwithstanding any provision of these Orders, the State of Ohio retains all of its access rights and authorities, including enforcement authorities related thereto, under any applicable statute or regulations.

## X. DESIGNATED SITE COORDINATORS

21. Within five (5) days of the effective date of these Orders, Respondent shall notify Ohio EPA, in writing, of the name, address and telephone number of its designated Site Coordinator and Alternate Site Coordinator. If a designated Site Coordinator or Alternate Site Coordinator is changed, the identity of the successor will be given to the other Party at least five (5) days before the changes occur, unless impracticable, but in no event later than the actual day the change is made.

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22. To the maximum extent practicable, except as specifically provided in these Orders, communications between Respondent and Ohio EPA concerning the implementation of these Orders shall be made between the Site Coordinators. Respondent's Site Coordinator shall be available for communication with Ohio EPA regarding the implementation of these Orders for the duration of these Orders. Each Site Coordinator shall be responsible for assuring that all communications from the other Party are appropriately disseminated and processed. Respondent's Site Coordinator shall be present on the Site or on call during all hours of work at the Site.

23. Without limitation of any authority conferred on Ohio EPA by statute or regulation, the Ohio EPA Site Coordinator's authority includes, but is not limited to the following:

a. Taking samples and directing the type, quantity and location of samples to be taken by Respondent pursuant to an approved work plan;

b. Observing, taking photographs, or otherwise recording information related to the implementation of these Orders, including the use of any mechanical or photographic device;

c. Directing that the Work stop whenever the Site Coordinator for Ohio EPA determines that the activities at the Site may create or exacerbate a threat to public health or safety, or threaten to cause or contribute to air or water pollution or soil contamination;

d. Conducting investigations and tests related to the implementation of these Orders;

e. Inspecting and copying records, operating logs, contracts and/or other documents related to the implementation of these Orders; and

f. Assessing Respondent's compliance with these Orders.

## XI. PROGRESS REPORTS AND NOTICE

24. Unless otherwise directed by Ohio EPA, Respondent shall submit a written progress report to the Ohio EPA by the tenth (10) day of every month regarding the previous month. At a minimum, the progress reports shall:

a. Describe the status of the Work and actions taken toward achieving compliance with the Orders during the reporting period;

b. Describe difficulties encountered during the reporting period and actions taken to rectify any difficulties;

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c. Describe activities planned for the next month;

d. Identify changes in key personnel;

f. List target and actual completion dates for each element of activity, including project completion; and

g. Provide an explanation for any deviation from any applicable schedules.

25. Progress reports and all other documents required to be submitted pursuant to these Orders shall be sent by certified mail return receipt requested, or equivalent, to the following address:

Ohio Environmental Protection Agency
1800 Watermark Drive
P.O. Box 1049
Columbus, Ohio 43266-0149
ATTN: Manager, TPSS, DERR

Ohio EPA
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio 44087
ATTN: Site Coordinator, Archmere Drive Site, DERR

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All correspondence to Respondent shall be directed to the following address:

Gary W. Gifford
The Goodyear Tire & Rubber Company
Department 100D
1144 East Market Street
Akron, Ohio 44316

## XII. REVIEW OF SUBMITTALS

26. Ohio EPA shall review any work plan, report, or other item required to be submitted pursuant to these Orders. Upon review, Ohio EPA shall in writing: (a) approve the submission in whole or in part; (b) approve the submission upon specified conditions; (c) modify the submission; (d) disapprove the submission in whole or in part, notifying Respondent of deficiencies; or (e) any combination of the above.

27. In the event of approval, approval upon condition, or modification of any submission by the Ohio EPA, Respondent shall



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proceed to take any action required by the submission as approved, conditionally approved, or modified by Ohio EPA.

28. In the event that Ohio EPA initially disapproves a submission, in whole or in part, and notifies Respondent of the deficiencies, Respondent shall within fourteen (14) days, or such longer period of time as specified by Ohio EPA in writing, correct the deficiencies and resubmit to Ohio EPA for approval a revised submission. The revised submission shall incorporate all of the changes, additions, and/or deletions specified by Ohio EPA in its notice of deficiency. Notwithstanding the notice of deficiency, Respondent shall proceed to take any action required by a non-deficient portion of the submission.

29. In the event that Ohio EPA disapproves a revised submission, in whole or in part, Ohio EPA may again require Respondent to correct the deficiencies and incorporate all changes, additions, and/or deletions within fourteen (14) days, or such period of time as specified by Ohio EPA in writing. Or, in the alternative, Ohio EPA retains the right to terminate these Orders, perform any additional remediation, conduct a complete or partial Remedial Investigation and Feasibility Study, and/or enforce the terms of these Orders.

30. All work plans, reports, or other items required to be submitted to Ohio EPA under these Orders shall, upon approval by Ohio EPA, be deemed to be incorporated in and made an enforceable part of these Orders. In the event that Ohio EPA approves a portion of a work plan, report, or other item, the approved portion shall be deemed to be incorporated in and made an enforceable part of these Orders.

## XIII. DISPUTE RESOLUTION

31. The Site Coordinators shall, whenever possible, operate by consensus. In the event that there is a dispute about the adequacy of any work plan, report, or other item required to be submitted pursuant to these Orders, the Site Coordinators shall have seven (7) days from the date the dispute arises to negotiate in good faith in an attempt to resolve the dispute. This seven (7) day period may be extended by mutual agreement of the Parties. The dispute shall be considered to have arisen when one Party notifies the other Party in writing that it is invoking the dispute resolution procedures of this Section.

32. In the event that the Site Coordinators are unable to reach consensus on the dispute, each Site Coordinator shall reduce her/his position to writing within seven (7) days of the end of the good faith negotiation period described in Paragraph 31. Those written positions shall be immediately exchanged by the Site Coordinators. Following the exchange of written positions, the Site Coordinators shall have an additional seven (7) days to

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resolve the dispute. During this additional seven (7) day period, Respondent shall have the opportunity to discuss resolution of the dispute with the District Office Unit Supervisor for the Division of Emergency and Remedial Response. In the event that the dispute is not resolved at the end of the additional seven (7) day period, Respondent shall have five (5) days to discuss resolution of the dispute with a Central Office Section Manager for the Division of Emergency and Remedial Response. If Ohio EPA concurs with the position of Respondent, then the work plan, report, or other item required to be submitted pursuant to these Orders shall be modified accordingly.

33. If Ohio EPA does not concur with Respondent, Ohio EPA will resolve the dispute based upon and consistent with these Orders, the SOW, and other appropriate federal and state laws and regulations. The pendency of a dispute under this Section shall not affect the time period for completion of the Work, except that upon mutual agreement of the Parties, any time period may be extended as appropriate under the circumstances. Such agreement shall not be unreasonably withheld by Ohio EPA. Elements of the Work not affected by the dispute shall be completed in accordance with applicable schedules and timeframes.

## XIV. UNAVOIDABLE DELAYS

34. Respondent shall cause all Work to be performed in accordance with applicable schedules and timeframes unless any such performance is prevented or delayed by an event which constitutes an unavoidable delay. For purposes of these Orders, an "unavoidable delay" shall mean an event beyond the control of Respondent which prevents or delays performance of any obligation required by these Orders and which could not be overcome by due diligence on the part of Respondent. Increased cost of compliance shall not be considered an event beyond the control of Respondent.

35. Respondent shall notify Ohio EPA in writing within five (5) days after the occurrence of an event which Respondent contends is an unavoidable delay. Such written notification shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken and to be taken by Respondent to minimize the delay, and the timetable under which these measures will be implemented. Respondent shall have the burden of demonstrating that the event constitutes an unavoidable delay.

36. If Ohio EPA does not agree that the delay has been caused by an unavoidable delay, Ohio EPA will notify the Respondent in writing. Ohio EPA reserves the right to terminate these Orders, perform any additional remediation, conduct a partial or complete Remedial Investigation and Feasibility Study, and/or enforce the terms of these Orders in the event that Ohio EPA determines that the delay has not been caused by an unavoidable delay. If Ohio EPA agrees that the delay is attributable to an unavoidable delay, Ohio

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EPA will notify Respondent in writing of the length of the extension for the performance of the obligations affected by the unavoidable delay.

## XV. REIMBURSEMENT OF COSTS

37. Ohio EPA has incurred and continues to incur response costs in connection with the Site. Respondent shall reimburse Ohio EPA for all such response costs incurred by the Ohio EPA and its contractors both prior to and after the effective date of these Orders.

38. Within thirty (30) days of receipt of an accounting of response costs incurred prior to the effective date of these Orders, Respondent shall remit a check to the Ohio EPA for the full amount claimed.

39. With respect to response costs incurred after the effective date of these Orders, within sixty (60) days of the end of each calendar year, Ohio EPA will submit to Respondent an itemized statement of its response costs for the previous year. Within thirty (30) days of receipt of such itemized statement, Respondent shall remit payment for all of Ohio EPA's response costs for the previous year.

40. Respondent shall remit payments to Ohio EPA pursuant to this Section as follows:

a. Payment shall be made by certified check payable to "Treasurer, State of Ohio" and shall be forwarded to Fiscal Officer, Ohio EPA, P.O. Box 1049, 1800 Watermark Drive, Columbus, Ohio 43266-0149, ATTN: Edith Long.

b. A copy of the transmittal letter and check shall be sent to the Fiscal Officer, DERR, Ohio EPA, P.O. Box 1049, 1800 Watermark Drive, Columbus, Ohio 43266-0149, ATTN: Patricia Campbell, and to the Site Coordinator.

## XVI. RESERVATION OF RIGHTS

41. Ohio EPA reserves the right to seek legal and/or equitable relief to enforce the terms and conditions of these Orders, including penalties against Respondent for noncompliance with these Orders. Except as provided herein, Respondent reserves all rights and defenses it may have at law or equity.

42. Ohio EPA reserves the right to terminate these Orders and/or perform all or any portion of the Work or any other measures in the event that the requirements of these Orders are not wholly

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complied with within the timeframes required by these Orders.

43. Ohio EPA reserves the right to take any action pursuant to any available legal authority for past, present, or future violations of state or federal laws or regulations or the common law as a result of events or conditions arising from, or related to, the Site. Upon termination of these Orders pursuant to Section XXII, Termination, Respondent shall have resolved its liability to Ohio EPA only for the Work performed pursuant to these Orders.

## XVII. ACCESS TO INFORMATION

44. Respondent shall provide to Ohio EPA, upon request, copies of all documents and information within its possession or control or that of its contractors or agents relating to events or conditions at the Site including, but not limited to manifests, reports, correspondence, or other documents or information related to the Work.

45. Respondent may assert a claim that documents or other information submitted to the Ohio EPA pursuant to these Orders is confidential under the provisions of OAC 3745-50-30(A) or R.C. 6111.05(A). If no such claim of confidentiality accompanies the documents or other information when it is submitted to the Ohio EPA, it may be made available to the public without notice to Respondent.

46. Respondent may assert that certain documents or other information are privileged under the attorney-client or any other privilege recognized by state law. If Respondent makes such an assertion, it shall provide the Ohio EPA with the following: (1) the title of the document or information; (2) the date of the document or information; (3) the name and title of the author of the document or information; (4) the name and title of each addressee and recipient; (5) a general description of the contents of the document or information; and (6) the privilege being asserted by Respondent.

47. No claim of confidentiality shall be made with respect to any sampling, analytical monitoring, or laboratory or interpretive reports created, generated, collected, or requested pursuant to the provisions of these Orders.

48. Respondent shall preserve for the duration of these Orders and for a minimum of ten (10) years after its termination, all documents and other information within its possession or control, or within the possession or control of its contractors or agents, which in any way relate to the Work notwithstanding any document retention policy to the contrary. Respondent may preserve such documents by microfiche, or other electronic or photographic device. At the conclusion of this document retention period, Respondent shall notify Ohio EPA at least sixty (60) days prior to

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the destruction of these documents or other information; and upon request, shall deliver such documents and other information to Ohio EPA.

## XVIII. INDEMNITY

49. Respondent agrees to indemnify, save, and hold harmless Ohio EPA from any and all claims or causes of action arising from, or related to, any acts or omissions of the Respondent, its officers, employees, agents, or assigns, in carrying out any activities pursuant to these Orders. Ohio EPA agrees to provide notice to Respondent within thirty (30) days of receipt of any claim which may be the subject of indemnity as provided in this Section, and to cooperate with Respondent in the defense of any such claim or action against the Ohio EPA. Ohio EPA shall not be considered a party to and shall not be held liable under any contract entered into by Respondent in carrying out the activities pursuant to these Orders.

## XIX. OTHER CLAIMS

50. Nothing in these Orders shall constitute or be construed as a release from any claim, cause of action, or demand in law or equity against any person, firm, partnership, entity, or corporation, not subject to these Orders for any liability arising from, or related to, events or conditions at the Site. The Parties to these Orders reserve all rights (including any right to contribution or indemnity possessed by Respondent against any other persons or entities who may be responsible for actual or threatened releases at the Site), claims, demands, and causes of action it has or may have against any and all other persons and entities not parties to these Orders. To the extent provided by 42 U.S.C. sections 9613(f)(2) and 9622(h)(4), and upon termination and satisfaction of these Orders as provided in Section XXII, Respondent shall be afforded protection against claims for contribution as described in 42 U.S.C. sections 9613(f)(2) and 9622(h)(4) only for the matters addressed by these Orders.

## XX. LAND USE AND CONVEYANCE OF TITLE

51. Within thirty (30) days of the effective date of these Orders, Respondent shall record a notice on the deed to property which is part of the Site and owned by that Respondent with the County Recorder's Office for Summit County, Ohio. The notice shall reference the existence of these Orders and shall describe any monitoring or containment devices present on Respondent's property.

52. Respondent shall assure that no portion of the Site will be used in any manner which would adversely affect the integrity of any containment or monitoring systems at the Site. To the extent that Respondent owns a portion of the Site, Respondent shall notify the Ohio EPA by registered mail at least ninety (90) days

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in advance of any conveyance by it of any interest in real property which is known to comprise the Site. Respondent shall include provisions in any access agreements obtained pursuant to these Orders requiring the property owner(s) to notify Respondent and the Ohio EPA by registered mail at least ninety (90) days in advance of any conveyance by the property owner(s) of any interest in real property which is known to comprise the Site. The notice required by this Paragraph shall include the name and address of the grantee and a description of the provisions made for continued maintenance of containment and monitoring systems. In no event shall the conveyance of any interest in the property that includes, or is a portion of, the Site release or otherwise affect the liability of Respondent to comply with these Orders.

## XXI. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

53. The effective date of these Orders shall be the date on which it is entered in the Journal of the Director of the Ohio EPA.

54. These Orders may be modified by mutual agreement of the Parties. Modifications shall be in writing and shall be effective on the date entered in the Journal of the Director of the Ohio EPA.

## XXII. TERMINATION

55. These Orders shall terminate upon Ohio EPA's approval in writing of Respondent's written certification to the Ohio EPA that all Work required to be performed under these Orders, including the payment of response costs, has been completed. The termination of these Orders shall not affect the terms and conditions of Section XVI, Reservation of Rights, Section XVII, Access to Information, Section XVIII, Indemnity, Section XIX, Other Claims, and Section XX, Land Use and Conveyance of Title.

**IT IS SO ORDERED:**

Donald R. Schregardus

Donald R. Schregardus, Director
Ohio Environmental Protection Agency

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Date

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## WAIVER AND AGREEMENT

A. In order to resolve disputed claims, without admission of fact, violation, or liability, Respondent agrees that these Findings and Orders are lawful and reasonable, and agrees to perform all actions required by these Orders.

B. Respondent hereby waives the right to appeal the issuance, terms and conditions, and service of these Orders and hereby waives any and all rights that it may have to seek judicial review of the issuance, terms and conditions, and service of these Orders either in law or equity.

C. Notwithstanding the limitations herein on Respondent's right to appeal or seek judicial review, the Ohio EPA and Respondent agree that in the event that these Orders are appealed by any other party to the Environmental Board of Review, or any court, Respondent retains the right to intervene and participate in such appeal. In such event, Respondent shall continue to comply with these Orders notwithstanding such appeal and intervention unless these Orders are stayed, vacated or modified.

IT IS SO AGREED:

Respondent

The Goodyear Tire & Rubber Company — September 23, 1994
Date

Title Vice President — 9/30/94

ATTEST: _____
Assistant Secretary

OHIO ENVIRONMENTAL PROTECTION AGENCY

Donald R. Schregardus, Director — DEC - 5 1994
Date

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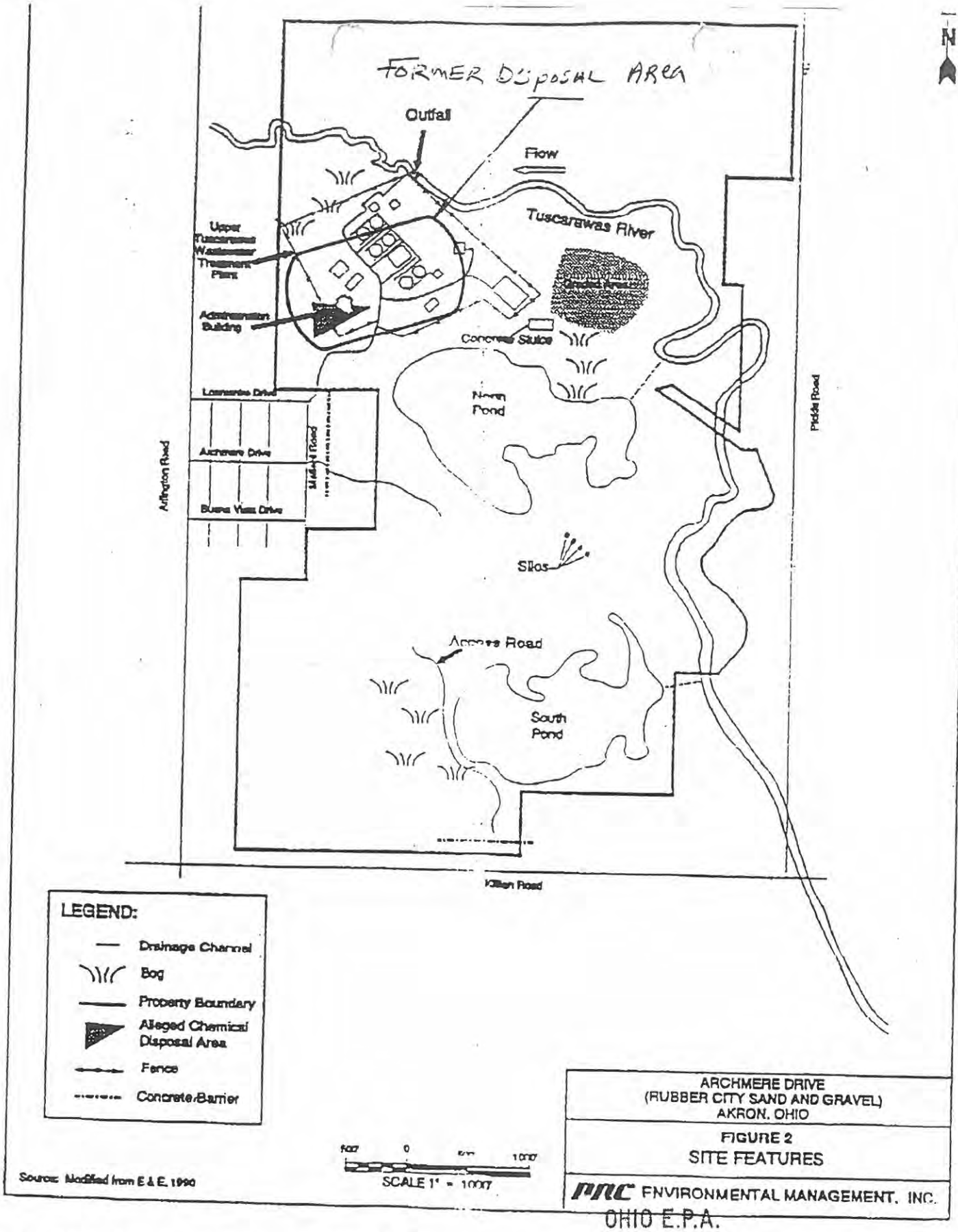


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APPENDIX A

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SUBJECT: GENERIC STATEMENT OF WORK, REMEDIAL INVESTIGATION/FEASIBILITY STUDY, STATE VERSION

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PURPOSE:

The purpose of this remedial investigation/feasibility study (RI/FS) is to investigate the nature and extent of releases of hazardous waste or constituents, pollutants, wastes, industrial wastes or contaminants at the Site, assess the potential risk to human health and the environment, and develop and evaluate potential remedial alternatives. The RI and FS are interactive and may be conducted concurrently so that the data collected in the RI influences the development of remedial alternatives in the FS, which in turn affects the data needs and the scope of treatability studies.

The Respondent shall conduct this RI/FS and shall produce an RI and FS report that are in accordance with this statement of work, the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (RI/FS Guidance) (U.S. EPA, Office of Emergency and Remedial Response, October 1988), and any other guidances that Ohio EPA uses in conducting an RI/FS (a list of the primary guidances is attached), as well as any additional requirements in the administrative order. The RI/FS Guidance describes the report format and the required report content. The Respondent shall furnish all necessary personnel, materials, and services needed, or incidental to, performing the RI/FS, except as otherwise specified in the administrative order.

At the completion of the RI/FS and the terms of this Order, the Ohio EPA shall be responsible for the selection of a site remedy. The remedial action alternative selected by the Ohio EPA shall meet the cleanup standards specified in the How Clean Is Clean Policy. That is, the selected remedial action will be protective of human health and the environment, shall be in compliance with applicable or relevant and appropriate requirements of other laws, will be cost-effective, shall utilize permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable, and shall address the statutory preference for treatment as a principal element. The final RI and FS reports, as approved by the Ohio EPA, shall, with the administrative record, form the basis for the selection of the site's remedy and will provide the information necessary to support the development of a decision document.

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B. Human Risk Assessment Report

TASK 7 -- Environmental Baseline Risk Assessment

A. Conceptual Site Model
B. Environmental Risk Assessment Report

TASK 8 -- Development and Screening Alternatives

A. Remedial Action Objectives
B. Technologies Screening
C. Alternatives Array

TASK 9 -- Treatability Study

A. Treatability Study Work Plan
B. Treatability Study Evaluation Report

TASK 10 -- Detailed Analysis of Alternatives

A. Detailed Analysis of Alternatives Report
B. Feasibility Study Report

TASK 11 -- Monthly Progress Reports

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TASK 1 -- SCOPING OF THE RI/FS

The Respondent shall describe the background of the Site, its history and current condition and outline the purpose and need for remedial investigation of the Site. Data gathered during previous investigations, site inspections and other relevant activities shall be used. Previous investigations shall be summarized and referenced. This information shall be documented in the RI/FS Work Plan (Task 2.A.).

A. Site Background/Site History

The Respondent shall review and analyze all existing site background information and will conduct a site visit to assist in planning the scope of the RI/FS.

1. Collect and analyze existing data and document the need

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2. Conduct Site Visit

The Respondent shall conduct a site visit during the project scoping phase to assist in developing a conceptual understanding of sources and areas of contamination as well as potential exposure pathways and receptors at the site. During the site visit the Respondent shall observe the Site's physiography, hydrology, geology, and demographics, as well as natural resources, ecological and cultural features and receptors. This information will be utilized to better scope the project and to determine the extent of additional data necessary to characterize the site, better define potentially applicable requirements and narrow the range of preliminarily identified remedial alternatives.

B. Implementation of Interim/Emergency Actions.

1. The Respondent's report shall document any interim or emergency action which were or are being undertaken at the Site. This shall include:

   a. Objectives of the interim or emergency actions: how the action has mitigated or is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term remedial action at the Site;

   b. Design, construction, operation and maintenance requirements;

   c. Schedules for design, construction and monitoring; and

   d. Schedule for progress reports.

Respondent shall submit a report to the Ohio EPA documenting the results of Tasks 1.A.1., 1.A.2. and 1.B.1. as part of the cf the RI/FS Work Plan.

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management strategy developed during scoping and data needs for evaluation of remedial alternatives. The plan will reflect coordination with treatability study requirements. The RI/FS Work Plan shall provide sufficient information for the Ohio EPA to identify applicable or relevant and appropriate Federal and state requirements (chemical-specific, location-specific and action-specific).

The RI/FS work plan shall provide a detailed description of the tasks to be performed, information needed for each task (e.g., for human health and environmental risk evaluation), information to be produced during and at the conclusion of each task, and a description of the work products that will be submitted to the Ohio EPA. This includes the deliverables set forth in the remainder of this statement of work: a schedule for each of the required activities; the conceptual site model for and the human health baseline risk assessment; the conceptual site model for and the environmental baseline risk assessment; the RI report; the FS report and required interim deliverables; monthly reports to the Ohio EPA; and meetings and presentations to the Ohio EPA at the conclusion of each major phase of the RI/FS.

Because of the unknown nature of the Site and iterative nature of the RI/FS, additional data requirements and analyses may be identified throughout the process. The Respondent will submit a technical memorandum documenting the need for additional data, and identifying the DQOs whenever such requirements are identified. In any event, the Respondent is responsible for fulfilling additional data and analysis needs identified by the Ohio EPA consistent with the purposes and objectives of this RI/FS.

B. Quality Assurance Project Plan

The Respondent shall prepare a plan to document all monitoring and investigation procedures: sampling, field measurements, sample analysis, toxicity testing, bioassay, and all modeling performed during the investigation to characterize the environmental setting, source(s), contamination, and human and biological receptors to ensure that all information, data and resulting decisions are technically sound, statistically valid and properly documented. This plan shall comport with Ohio EPA's Guidelines and Specifications for Preparing Quality

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d. Description of the measures to be taken to assure that the following data sets can be compared quantitatively or qualitatively to each other:

i) RI data collected by the Respondent over some time period;

ii) RI data generated by an outside laboratory or consultant employed by the Respondent versus data collected by the Respondent, and;

iii) Data generated by separate consultants or laboratories over some time period not necessarily related to the RI effort.

iv) Data generated by Ohio EPA or by an outside laboratory or consultant employed by Ohio EPA;

e. Details relating to the schedule and information to be provided in quality assurance reports. These reports should include but not be limited to:

i) Periodic assessment of measurement data accuracy, precision and completeness;

ii) Results of performance audits;

iii) Results of system audits;

iv) Significant quality assurance problems and recommended solutions; and

v) Resolutions of previously stated problems.

2. Sample Analysis

The Sample Analysis section of the Quality Assurance Project Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sample custodian at the laboratory facility

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ii) Laboratory control sample(s);

iii) Calibration check sample(s);

iv) Replicate sample(s);

v) Matrix-spiked sample(s);

vi) "Blind" quality control sample(s);

vii) Control charts;

viii) Surrogate samples;

ix) Zero and span gases; and

x) Reagent quality control checks.

h. Preventative maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

3. Modeling

The Modeling section of the Quality Assurance Project Plan shall apply to all models used to predict or describe fate, transport or transformation of contaminants in the environment and shall discuss:

a. Model assumptions and operating conditions;

b. Input parameters; and

c. Verification and calibration procedures.

4. In Situ or Laboratory Toxicity Tests

The Toxicity Test section of the Quality Assurance Project Plan shall apply to all tests or bioassay used to predict or describe impacts of contaminants on a population, community, or ecosystem level.

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formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

i) Display sampling locations and sampling grid;

ii) Indicate boundaries of sampling area, and areas where more data are required;

iii) Display levels of contamination at each sampling location or location from which organism was taken;

iv) Display geographical extent of contamination;

v) Display contamination levels, averages and maxima;

vi) Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters;

vii) Indicate features affecting intramedia transport and show potential receptors;

viii. Compare nature and extent of contamination with results of ecological or biological sampling or measurements; and

ix) Display comparisons with background or reference analyses or measurements.

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C. Field Sampling Plan

1. Sampling

The Sampling section of the Field Sampling Plan shall discuss:

a. Sufficient preliminary sampling to ensure the proper planning of b through o below;

b. Selecting appropriate sampling locations, depths,

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associated with sample acquisition;

iii) Documentation of specific sample preservation method;

iv) Calibration of field devices;

v) Collection of replicate and field duplicate samples;

vi) Submission of field-biasedand equipment blanks, where appropriate;

vii) Potential interferences present at the site or facility;

viii) Construction materials and techniques associated with monitoring wells and piezometers;

ix) Field equipment listing and sample containers;

x) Sampling order; and

xi) Decontamination procedures.

m. Selecting appropriate sample containers;

n. Sample preservation; and

o. Chain-of-custody, including:

i) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment;

ii) Sample sealing, storing and shipping procedures to protect the integrity of the sample; and,

iii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

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vi) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;

vii) Field equipment listing;

viii) Order in which field measurements were made; and

ix) Decontamination procedures; and

i. Selecting the number, location, media, and organisms for determining background or reference conditions.

D. Health and Safety Plan.

The Respondent shall develop a Health and Safety plan to protect the health and safety of personnel involved in the site investigations and the surrounding community.

1. Major elements of the Health and Safety Plan shall include:

a. Facility or site description including availability of resources such as roads, water supply, electricity and telephone service;

b. Description of the known hazards and an evaluation of the risks associated with the incident and with each activity conducted;

c. Listing of key personnel (including the site safety and health officer) and alternates responsible for site safety, response operations, and for protection of public health;

d. Delineation of work area, including a map;

e. Description of levels of protection to be worn by personnel in the work area;

f. Description of the medical monitoring program for on-site responders;

g. Description of standard operating procedures

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g. OSHA regulations particularly in 29 CFR 1910 and 1926;

h. State and local regulations; and

i. Site or facility conditions.

The Safety Plan should identify problems or hazards that may be encountered and their solution. Safety procedures to be followed to protect third parties, such as visitors or the surrounding community, should also be provided.

TASK 3 -- INTERIM ACTIONS

A. At any time during the Remedial Investigation, the Respondent may propose to conduct or the Ohio EPA may require that the Respondent conduct an interim remedial action(s). Any interim remedial action proposed by the Respondent for the Site must be approved by the Ohio EPA prior to implementation. The following factors shall be considered in determining the appropriateness of an interim remedial action:

1. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous wastes or substances;

2. Actual or potential contamination of drinking water supplies or sensitive ecosystems;

3. Hazardous waste or substances in drums, barrels, tanks or other bulk storage containers that may pose a threat of release;

4. High levels of hazardous waste or substances in soils largely at or near the surface that may migrate;

5. Weather conditions that may cause hazardous waste or substances to migrate or be released;

6. Threat of fire or explosion; and

7. Other situations or factors that may pose threats to public health, welfare or the environment.

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SUBJECT: GENERIC STATEMENT OF WORK, REMEDIAL INVESTIGATION/FEASIBILITY STUDY, STATE VERSION

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This task shall be completed by the Ohio EPA.

TASK 5 -- REMEDIAL INVESTIGATION

The Respondent shall conduct those investigations necessary to: characterize the site (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization and Ecological Assessment); and identify actual or potential receptors (Ecological and Human Risk Assessment).

The investigations should result in data of adequate technical quality to support the development of the Human Health Baseline Risk Assessment and the Ecological Risk Assessment and the evaluation of remedial action alternatives of the Feasibility Study.

Remedial Investigation activities shall follow the plans set forth in Task 2. All sampling, analyses, and measurements shall be conducted in accordance with the QAPP. All sampling and measurement locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Respondent shall collect information to supplement and verify existing information on the environmental setting at the site as well as the environmental setting adjacent to and surrounding the Site. The Respondent shall characterize the following:

1. Regional Hydrogeology

The Respondent shall conduct a program to evaluate the regional hydrogeologic characteristics surrounding the facility. Regional information can be obtained as described in Task 1. This shall include but not be limited to:

a. Depth to bedrock and lithology;

b. Characteristics of major stratigraphic units and the depositional environment;

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iii) Rock and soil (ASTM 2488 and 2487) classification;

iv) Grain size distribution (sieve and hydrometer) curves;

v) Thickness;

vi) Lateral extent;

vii) Moisture content;

viii) The attenuation capacity and mechanisms of attenuation of the natural earth material and/or fill (i.e., ion exchange capacity, base saturation, organic carbon content, mineral content, soil sorptive capacity, storage capacity);

ix) Soil Ph;

b. The Respondent shall conduct a program to characterize the near surface soil and rock units. This shall include:

i) SCS soil classification;

ii) Surface soil distribution;

iii) Infiltration;

iv) Evapo-transpiration;

c. A discussion of the local occurrence of ground water including:

i) Identification of all aquifer systems, including depth from the surface and lateral and vertical extent. (Aquifer system means one or more geologic unit or formation that is wholly or partly saturated with water and is able to store, transmit and yield significant amounts of water to wells or springs.);

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ii) Zones of higher permeability, such as sand and gravel deposits, that might direct the flow of contaminants;

iii) Zones of low permeability that may restrict and/or attenuate the flow of contaminants; and

iv) Water-bearing zones above the confining layer that may serve as pathways for contaminant migration including perched zones of saturation.

e. Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

i) Water level contour and/or potentiometric surface maps;

ii) Hydraulic cross sections showing vertical gradients;

iii) Flow nets, including the vertical and horizontal components of flow and the interconnection between waterbearing strata; and

iv) Any temporal changes in hydraulic gradients and flow directions due, for example, to seasonal or man-made influences.

f. A description of man-made influences that may affect the hydrogeology of the Site, identifying:

i) Active and inactive water supply and production wells with appropriate pumping schedules; and

ii) Man-made structures such as pipelines, french drains, ditches, unlined and lined ponds, lagoons, septic tanks, NPDES permitted outfalls, retention areas and

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2) Water level measurements and procedures;

3) Ground water seepage observations during drilling; and

4) Pumping tests and slug tests (including type, description and rational for its use, raw data and method of interpreting the results).

iv) A description, rationale and raw data of indirect methods such as soil survey, geophysical and modeling. (These methods can be used to infer ground water characteristics and support or guide direct methods. However, no site remedial investigation can be based strictly on these methods.)

3. Surface Water and Sediment

The Respondent shall conduct a program to characterize any surface water bodies in the vicinity of the Site. Such characterization shall include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification and volume;

ii) For impoundments: location, elevation, surface area, depth, volume, freeboard and purpose of impoundment;

iii) For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations and flood zones (i.e., 50 and 100 year events);

iv) Drainage patterns;

v) Evapo-transpiration; and

vi) Any other known discharges including those permitted by NPDES.

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frequency of occurrence.

b. A description of topographic and man-made features which affect air flow or emission patterns, including:

i) Ridges, hills or mountain areas;

ii) Canyons or valleys;

iii) Surface water bodies (e.g. rivers, lakes, bays, etc.);

iv) Wind breaks and forests; and

v) Buildings; and

vi) Any other features that may affect air flow or emission patterns.

B. Source Characterization

The Respondent shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, collected, came to be located or removed including: type (hazardous, solid, residential, industrial, etc.); quantity; physical form; disposition (containment or nature of deposits); and Site characteristics affecting release (e.g., Site security and engineering barriers). Data shall include all information referenced in the Remedial Investigation Work Plan (Task 2). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area characteristics:

a. Location of unit/disposal area;

b. Type of unit/disposal area;

c. Design features;

d. Operating practices (past and present);

e. Period of operation;

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c. Migration and dispersal characteristics of the waste;

i) Sorption;

ii) Biodegradability, bioconcentration, biotransformation;

iii) Photodegradation rates;

iv) Hydrolysis rates;

v) Chemical transformations;

vi) Chemical interactions; and

vii) Products of all such reactions or processes.

The Respondent shall document the procedures used in making the above determinations.

C. Contamination Characterization

The respondent shall collect analytical data on air, ground water, soils, surface water, sediment and subsurface gas contamination in the vicinity of the Site. This data shall be sufficient to define the extent, origin, direction and rate of movement of contaminants. Data shall include all information referenced in the Remedial Investigation Work Plan (Task 2). The Respondent shall address the following types of contamination at the Site:

1. Ground Water Contamination

The Respondent shall conduct a ground water investigation to characterize the nature and extent of any plumes of contamination at the Site. The investigation shall include a description and quantification of ground water quality in the aquifer systems and all significant zones of saturation or permeable zones that may act as pathways for contaminant migration. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent

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contamination migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Respondent shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Respondent shall conduct a investigation to characterize the nature and extent of contamination in surface water bodies and sediment resulting from contaminant releases at the Site. The investigation shall include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the Site, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement in surface water and sediment;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the Ph, total dissolved solids, specific contaminant concentrations, etc.

Respondent shall document the procedures used in making the above determinations.

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from the subsurface or surface;

c. The rate, amount, and density of the gases being emitted; and

d. Horizontal and vertical concentration profiles of the subsurface gases emitted.

The Respondent shall document the procedures used in making the above determinations.

D. Ecological Assessment

The Respondent shall conduct an investigation to characterize any adverse effects to flora and fauna, at the population, community or ecosystem level, that is or has been caused or influenced by contamination from the facility. The data from this investigation shall be collected in a manner that is compatible and concurrent with the other sections of Task 4. The activities described for this section may be performed iteratively and/or in a phased approach as more data is gathered during other portions of the remedial investigation. Therefore, parts of the work plans(s) for this section may be submitted as separate deliverables from Task 2.C., Phase I Ecological Assessment.

1. Site Characterization

Based on existing data and limited field work, the respondent shall consider the following:

a. See Task 1.A. (Site Background/Site History);

b. Identification of potential and probable ecological receptors including threatened and endangered species, unique and sensitive habitats or resources, etc.;

c. Identification of potential or probable exposure points for ecological receptors;

d. Document known or suspected effects of site contaminants to biota; and

e. Additional data needed for site characterization and the rationale for its necessity.

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4. Preliminary Ecological Assessment

The respondent shall combine the results of Tasks 5.D.1. to 5.D.3., above in order to define or evaluate the following on a site-specific basis:

a. Initial identification of exposure pathways and ecological receptors;

b. The existence of or potential for current and future adverse effects to occur on a population, community or ecosystems level; and

c. Determine if the results of the Phase I Ecological Assessment indicate the need for further ecological studies.

5. Phase II Ecological Assessment

Respondent shall prepare and implement, following Ohio EPA approval, a detailed work plan for further site investigations that shall be compatible with requirements listed in 4.D.3, but also include the following:

a. Study objectives and relevance to risk assessment objectives;

b. Identification of ecological measurement endpoints, assessment endpoints, and endpoint selection criteria;

c. Semiquantitative and quantitative surveys of flora and fauna;

d. Chemical sampling in potentially exposed habitats and reference sites;

e. Laboratory and in situ toxicity testing; and

f. Tissue analyses.

6. Ecological Assessment Report

The respondent shall prepare a report including all results from Tasks 5.D.1. to 5.D.5. above for incorporation into the Environmental Risk Assessment (see

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to:

a. Recreational;

b. Hunting;

c. Residential;

d. Commercial;

e. Zoning;

f. Nonagricultural use by flora and fauna; and

g. Future land use or access.

4. A demographic profile of the people who use or who have access to the facility and adjacent land including, but not limited to age, sex and sensitive subgroups.

F. RI Report

The Respondent shall prepare a Remedial Investigation (RI) Report to present Task 5, above, and Tasks 6 and 7, described below. The RI Report shall be developed in draft form for Ohio review and approval (refer to Section XIV of this Order, Review of Submittals). The report shall describe the nature and extent of contamination (qualitative/quantitative) in relation to background areas indicative for the area.

TASK 6 -- HUMAN HEALTH BASELINE RISK ASSESSMENT

The Respondent shall prepare a thorough analysis and summary of all Site investigations and their results. The objective of this task will be to ensure that the investigation data are sufficient in quality (e.g, quality assurance procedures have been followed) and quantity to adequately describe the nature and extent of contamination, actual and potential future threats to human health and/or the environment and to support the feasibility study.

The results and data from all site investigations shall be organized and presented logically so that the relationships between

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c. Develop a final list of Contaminants of Concern.

2. Estimate of Exposure Point Concentrations of Indicator Chemicals. Respondent shall:

   a. Combine site monitoring data and environmental modeling results to:

      i) identify exposure pathways;

      ii) estimate exposure point concentrations; and

      iii) compare these concentrations to requirements, standards and criteria.

3. Estimate of Chemical Intakes. Respondent shall:

   a. Provide estimates of chemical intakes from:

      i) Air

      ii) Ground water

      iii) Surface water

      iv) Other exposure pathways (soils, food-stuffs, recreation, etc.)

   b. Combine pathway-specific intakes to yield total oral and total inhalation routes.

4. Respondent shall evaluate critical toxicity values (i.e., numerical values describing a chemical toxicity) and review general toxicological information for the indicator chemicals.

5. Risk Characterization. Respondent shall provide a detailed characterization of the risk posed by releases of toxic chemicals from the site. The characterization shall include the following elements:

   a. Noncarcinogenic effects using the Hazard Index approach, where:

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SUBJECT: GENERIC STATEMENT OF WORK, REMEDIAL INVESTIGATION/FEASIBILITY STUDY, STATE VERSION

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A. Conceptual Site Model.

The respondent shall prepare an interim document as defined in Task 6.A. above with emphasis on site ecology and biological receptors.

B. Environmental Risk Assessment Report

1. Briefly Describe the Site and Study Area:

   a. Describe physical and chemical factors that impact site ecology (e.g., fate and transport of contaminants, bioavailability, etc.);

   b. Describe past or current practices, disturbances, or stresses that impact(ed) site ecology;

   c. Describe the areal extent of environmental assessment;

   d. Provide a full account of ecosystems and populations potentially exposed to contamination; and

   e. Describe current and projected land use in and around the site as relevant to site ecology.

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effect(s) by:

a. Identifying requirements, standards and criteria;

b. Identifying relevant, peer reviewed literature toxicity values or toxicological effects where the above are lacking;

c. Comparison of exposure concentrations to a. and b. above, using suitable uncertainty factors and considering both chronic and acute endpoints;

d. Presenting the number and magnitude of exceedances of a and b above;

e. Presenting supporting evidence of risk from:

i) contaminant concentrations in biota;

ii) toxicity test results;

iii) supporting literature;

iv) field surveys of receptor populations;

v) measures of community structure and ecosystem function;

vi) comparison with reference or background data or observations; and

f. Discussing adverse or potential adverse effects under future use conditions.

5. Summary and Conclusions:

a. Summarize effects or potential effects of contamination to biological populations, communities or ecosystems under current and future use conditions;

b. Describe future effects in absence of remedial action; and

c. Describe population, community or ecosystem characteristics that may impact the nature of remedial

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information gathered during the Remedial Investigation, Ohio EPA's How Clean Is Clean policy and other pertinent Ohio EPA guidance, chemical specific ARAR's, when available other information (e.g., Rfds) and site specific factors, and shall be not inconsistent with section 300.430 of the NCP. Final remediation goals shall be determined by the Ohio EPA at or after the point the remedy is selected and are not part of this order.

In order to expedite review and approval of the Feasibility Study, the Respondent shall prepare a technical memorandum outlining the remedial action objectives.

B. Technologies Screening

1. Develop general response actions

The Respondent shall develop general response actions for each medium of interest defining containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the remedial action objectives.

2. Identify areas or volumes of media

The Respondent shall identify volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the Site will also be taken into account.

3. Identify, screen, and document remedial technologies

The Respondent shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the Site. General response actions will be refined to specify remedial technology types. Technology process options for each of the technology types will be identified either concurrent with the identification of technology types, or following

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based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives will be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis.

As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable, and minimize media transfer. The Respondent shall prepare a summary of the results and reasoning employed in the screening, the assembly of alternatives that remain after screening. The summary will be submitted with the Alternatives Array Report as described below.

4. Alternatives Development and Screening Deliverables

In order to expedite review and approval of the Feasibility Study, the Respondent will prepare an Alternatives Array Report summarizing the work performed in and the results of each activity described above under Task 8, including an Alternatives Array summary. These alternatives shall be modified by the Respondent, if required by Ohio EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis. This interim deliverable will document the methods, rationale, and results of the alternatives screening process. The Respondent will refer to the U.S.EPA Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA for an outline of the report format and the required report contents. This report will become a major portion of the Feasibility Study Report to be submitted as part of Task 10.B.

Based upon the Alternatives Array Report, the Ohio EPA shall identify and provide to the Respondent ARARs for the range of alternatives presented. These ARARs may be modified by the Agency based upon the results of other tasks of this SOW.

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f. Analyzing and interpreting the data

g. Reporting the results

h. Sampling and Analysis Plan

i. Health and Safety Plan

B. Treatability Study Evaluation Report

1. Conducting a Treatability Study

The Respondent will perform the treatability study in accordance with the approved work plan in a systematic fashion to ensure that the data generated can support the remedy evaluation process.

2. Submission of Treatability Study Evaluation Report

Upon completion of the treatability study(ies), the Respondent will prepare a treatability study evaluation report. The Respondent will follow U.S. EPA's guidance document, Guide for Conducting Treatability Studies Under CERCLA (Interim Final) EPA/540/2-89/058, for the appropriate format and content.

TASK 10 -- DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES

A. Detailed Analysis of Alternatives Report

The detailed analysis will be conducted by the Respondent to provide the Ohio EPA with the information needed for the selection of a site remedy. Respondent shall conduct a detailed analysis of the alternatives that pass through the initial screening. This detailed analysis shall consist of an analysis of each option against a set of eight evaluation criteria and a comparative analysis of all options using the same evaluation criteria as a basis for comparison.

The detailed analysis shall consist of the following elements:

1. Detailed Description

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Each alternative will be assessed in terms of the extent to which it will mitigate damage to or protect public health, welfare and the environment, in comparison to the other remedial alternatives.

The no action alternative will be fully evaluated to describe the current site conditions and anticipate environmental conditions if no actions are taken. The no action alternative will serve as a baseline for the Environmental Assessment.

3. Apply Eight Criteria and Document Analysis

The respondent shall apply the eight evaluation criteria described below to the assembled remedial alternatives.

a. Overall Protection of Human Health and the Environment.

Alternatives shall be assessed as to whether they can adequately protect human health and the environment from unacceptable risks posed by hazardous substances, pollutants or contaminants present at the site by eliminating, reducing or controlling exposures to levels established during development of remediation goals. This is a threshold requirement and the primary objective of the remediation program.

b. Compliance with Applicable or Relevant and Appropriate Requirements.

The alternatives shall be assessed as to whether they attain applicable or relevant and appropriate standards, criteria and requirements of state and federal environmental and public health laws.

c. Long-term Effectiveness and Permanence.

Alternatives shall be assessed for the long-term effectiveness and permanence they afford, along with the degree of certainty that the alternative will prove successful. Factors that shall be considered, as appropriate, include the following:

i) Nature and magnitude of total residual risks;

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iii) The degree of expected reduction in toxicity, mobility or volume of the waste due to treatment or recycling and the specifications of which reduction(s) are occurring;

iv) The degree to which the treatment is irreversible;

v) The type and quantity of residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate;

vi) The degree to which treatment will reduce the inherent hazards posed by the principal threats at the Site; and

vii) The degree to which the treatment processes employed reduce the transfer of contaminants between environmental media.

e. Short-term Effectiveness.

The short-term impacts of the alternatives during the construction and implementation phase, and until the objectives of the remedial action have been met, shall be assessed considering the following:

i) Short-term risks that may be posed to the community during construction and implementation of an alternative and until the remedial action objectives have been met;

ii) Potential impacts on workers during remedial action and with the objectives of remedial action have been met, the effectiveness and reliability of protective measures;

iii) Potential environmental impacts that may result from the remedial action and the effectiveness and reliability of mitigative measures during implementation and until the objectives of the remedial action have been met; and

iv) Time until response action objectives are

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The types of costs that shall be assessed include the following:

i) Direct and indirect capital costs, including contingency and engineering fees;

ii) Annual operation and maintenance costs; and

iii) Net present value of capital and O&M costs.

h. Community Acceptance.

This assessment includes determining which components of the alternatives interested persons in the community support, have reservations about, or oppose. This assessment, which will be completed by the Ohio EPA, will occur throughout the implementation of this RI/FS and will be completed after comments on the proposed remedy are received. It is not part of this order.

4. Compare Alternatives Against Each Other and Document the Comparison of Alternatives

The Respondent will perform a comparative analysis between the remedial alternatives. That is, each alternative will be compared against the others using the evaluation criteria as a basis of comparison. Identification and selection of the preferred alternative are reserved by the Ohio EPA and are not part of this Order. The comparative analysis will be documented and presented in the Feasibility Study Report described below.

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B. Feasibility Study Report

The Respondent will submit a draft feasibility study report to the Ohio EPA for review, comment, and approval. This report will include the results of Tasks 9 and 10. The respondent will refer to the U.S.EPA Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA for an outline of the report format and the required report content. Upon satisfactorily addressing Ohio EPA's comments, the Respondent will prepare and submit a final feasibility study report.

APP DIX B

Appendix B

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# OHIO EPA AND U.S. EPA GUIDANCE DOCUMENTS

1. How Clean is Clean, Final, Ohio EPA, Division of Emergency and Remedial Response, Policy No. DERR-00-RR-009, July 26, 1991

2. Background Guidance, Final, Ohio EPA, Division of Emergency and Remedial Response, July 26, 1991

3. Guidance for Conducting Remedial Investigation and Feasibility Studies under CERCLA, Interim Final, OSWER 9355.3-01, EPA/540/G-89/004, October 1988

4. Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002, December 1989

5. Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part B), "Development of Risk-based Preliminary Remediation Goals," OSWER Directive 9285.7-01B, December 1991, Interim

6. Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part C), "Risk Evaluation of Remedial Alternatives," OSWER Directive 9285.7-01C, December 1991, Interim

7. Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors." OSWER Directive 9285.6-03, March 1991, interim final

8. Risk Assessment Guidance for Superfund: Volume II -Environmental Evaluation Manual, OSWER Directive 9285.7-01, EPA/540/1-89/001A, March 1989, interim final

9. Superfund Exposure Assessment Manual, OSWER Directive 9285.5-1, EPA/540/1-88/001, April 1988

10. Exposure Factors Handbook, EPA/600/8-89/043, March 1990

11. RCRA Ground Water Monitoring Technical Enforcement Guidance Document (TEGD), OSWER Directive 9950.1, September 1986

12. Guidance for Remedial Actions for Contaminated Ground Water at Superfund Sites, OSWER Directive 9283.1-2, EPA/540/G-88/003, December 1988, interim final

13. Data Quality Objectives for Remedial Response Activities, Volume I - Example Scenario, OSWER Directive 9355.0-7B, EPA/540/G-87/004, March 1987

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14. Superfund Remedial Design and Remedial Action Guidance, OSWER 9355.0-4A, June 1986

15. Ecological Assessments of Hazardous Wastes Sites: A Field and Laboratory Reference, EPA/600/3-89/013, March 1989

16. Guidelines and Specifications for Preparing Quality Assurance Project Plans, Ohio EPA, Division of Emergency and Remedial Response, Policy No. DERR-00-RR-008, March 1990

17. CERCLA Compliance with Other Laws Manual - Part I, OSWER Directive 9234.1-01, EPA/540/G-89/006, August 1988, interim final

18. CERCIA Compliance with Other Laws Manual - Part II, OSWER Directive 9234.1-02, EPA/540/G-89/009, August 1989, interim final

19. U.S. EPA Integrated Risk Information System (IRIS) Data Base

20. Guidance for Data Usability in Risk Assessment. OSWER Directive 9285.7-05, EPA/540/G-90/008, October 1990, interim final

21. U.S. EPA Health Effects Assessment Summary Tables, Office of Emergency & Remedial Response. published annually

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Note: This list of guidance documents is updated periodically. You should check with Ohio EPA to verify that this list is the most current available.

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