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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII

IN THE MATTER OF:)
)
 SAND CREEK)
 OPERABLE UNITS NO. 3 & 6)
 SITE NO. 14)
)
 Browning-Ferris Industries)
 of Colorado, Inc.)
)
 Burlington Northern Railroad Co.)
 RESPONDENTS.)
)
 PROCEEDING UNDER SECTIONS 106(a) and)
 107 OF THE COMPREHENSIVE)
 ENVIRONMENTAL RESPONSE, COMPENSATION,)
 AND)
 LIABILITY ACT, AS AMENDED (42 U.S.C.)
 § 9606(a) and § 9607.)

Administrative No. *9.6*
S.F. File Number

EPA Docket No.
CERCLA VIII-93-27

UNILATERAL ADMINISTRATIVE ORDER
FOR REMEDIAL DESIGN/REMEDIAL ACTION

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ATTACHMENTS

Exhibit 1. Record of Decision

Exhibit 2. Statement of Work

Exhibit 3. Schedule

I. INTRODUCTION AND JURISDICTION

1. This Order directs Respondents to perform a Remedial Design (RD) for the remedy described in the Record of Decision for the Sand Creek site, Operable Units (OUs) No. 3 & 6, (hereinafter the Site) dated June 30, 1993, and to implement the design by performing a Remedial Action (RA). This Order is issued to Respondents by the United States Environmental Protection Agency (EPA) under the authority vested in the President of the United States by sections 106(a) and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9606(a), as amended (CERCLA). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12,580, 52 Fed. Reg. 2,923, and was further delegated to EPA Regional Administrators on September 13, 1987, by EPA Delegation No. 14-14-B. This authority has been further delegated to the Director of the Hazardous Waste Management Division, EPA Region VIII.

II. FINDINGS OF FACT

2. The Site is located at 48th and Holly in Commerce City, Adams County, Colorado. The landfill, which comprises OUs 3 & 6 of the Sand Creek Industrial Site, a National Priorities List site, encompasses an area of approximately 150 acres and is bordered on the North by East 52nd Avenue, on the South by East 48th Avenue, on the West by Dahlia Street, and on the East by the intersection of the railroad right-of-way and East 48th Avenue, approximately one-quarter mile east of Ivy Street.

Operations began at the landfill in 1967. Fill operations began at the South end of the landfill and proceeded North in one layer or "lift". Cover material was graded from on-site areas and the waste was watered to aid compaction. The landfill accepted both demolition and domestic refuse, which were sorted prior to dumping. Wastes disposed of at the Landfill included household, industrial, institutional, commercial and agricultural wastes, among others. Metal refuse was placed under the nearby railroad right-of-way. The landfill was closed in 1975 and was revegetated.

In 1982 the United States Environmental Protection Agency (EPA) performed an investigation at the Sand Creek Industrial Superfund site to determine if it should be placed on the National Priorities List (NPL). Analytical results indicated the presence of several volatile organic compounds in the surface and ground water, including 1,1 dichloroethane (1,1-DCA), 1,2 transdichloroethene (1,2 trans-DCE), 1,1,1-trichloroethane (1,1,1-TCA) and 1,1-dichloroethene (1,1-DCE). Inorganic compounds that were detected at concentrations elevated above

background levels included arsenic, cadmium, nickel and zinc. In December of that year, the Site was placed on the NPL.

A Remedial Investigation/Feasibility Study (RI/FS) was completed in 1988 for the Sand Creek Industrial Superfund site. Analytical data obtained in conducting the RI, and in subsequent sampling events, forms the basis for the taking of an RA at this Site. Twenty-three Chemicals of Concern were identified at the Site which constitute a threat to human health and/or the environment. These chemicals include volatile organics and heavy metals and have been determined to be carcinogenic and/or to pose the greatest relative risk to humans and the environment.

3. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Sand Creek Industrial site on the National Priorities List set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register in December, 1982.

4. EPA has divided the Sand Creek Industrial site into OUs for the purposes of response. The OUs which are the subject of this Order are OU3 and OU6, which pertain to the landfill portion of the site.

5. From April 1985 to about 1988, EPA undertook an RI/FS for the Site, pursuant to CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 (NCP). A supplemental RI and FS was prepared to characterize target compounds/chemicals at the Site which may have contributed to ground water contamination by the landfill. This work began in 1990 and was completed in 1992. In addition, an OU3 RI and Focused FS were completed by March, 1993. The OU3 RI and Focused FS were deemed necessary due to the results of sampling events conducted prior to 1993.

6. In accordance with Section 117 of CERCLA, 42 U.S.C. § 9617, EPA issued the Proposed Plan for OU3 and OU6 on March 19, 1993. The proposed plan, along with the Focused Feasibility Study, results from the RI and information on the selected RA were all made available to the public for comment through the Administrative Record.

7. EPA's RA decision for OU3 and OU6 is embodied in a Record of Decision (ROD), executed on June 30, 1993. The ROD is supported by an Administrative Record that contains the documents and information upon which EPA based the selection of the RA.

8. Analytical results from investigations conducted at the Site indicate the presence of several volatile organic compounds in the surface and ground water, including 1,1 dichloroethane (1,1-DCA), 1,2 transdichloroethene (1,2 trans-DCE), 1,1,1-trichloroethane (1,1,1-TCA) and 1,1-dichloroethene (1,1-DCE).

Inorganic compounds that have been detected at concentrations elevated above background levels include arsenic, cadmium, nickel and zinc. The presence of these volatile organic compounds and heavy metals constitute a release and/or threatened release of a hazardous substances at the Site. (See the Site Wide 1988 RI and RI/FS for OU3 from 1992 for further information).

9. Potential release mechanisms associated with the Site include leaching of chemicals in refuse and their subsequent movement into the ground water and volatilization of landfill gases. Transport processes at the Site include ground water flow and withdrawal, ground water discharge to surface water and dispersion of volatile organics from the Site. Primary exposure pathways at the Site include inhalation of ambient air for local residents, nearby workers, and the schools nearest the Site. Dermal exposure is also a risk through human contact with surface water. Environmental receptors, which include plants and wildlife, risk exposure to the contaminants of concern at the Site through contact with surface water. There is currently limited use of ground water for crop irrigation and livestock watering in areas around the Site and the South Adams County Water and Sanitation District considers the ground water beneath the landfill a potential drinking water source. (See the OU3 Baseline Risk Assessment for further information.)

10. The selected remedy will reduce site risks to potentially exposed populations and the environment through control of landfill gases and exposure to contaminated ground water and by restricting contact with the landfill. A complete description of the remedy can be found in the ROD attached hereto as Exhibit 1.

11. Landfill[s], Inc. operated a landfill operation at the Site from approximately 1966 until 1974. Landfill[s], Inc. was originally incorporated on February 3, 1966. On November 8, 1968, the corporate name was changed to Landfill, Inc. Browning-Ferris Industries, Inc. (BFI) was incorporated in October, 1970 as a successor to Browning-Ferris Machinery Company, Inc., which was incorporated in October 1949. Landfill, Inc. is a subsidiary of Browning-Ferris Industries, Inc. Respondent, BFI, is now the owner of a portion of the Site and is the corporate successor to the prior owner and operator of the facility.

Chicago, Burlington & Quincy Railroad Company (CBQRR) obtained real property ownership of the western portion of the landfill on May 14, 1948. In March of 1969, CBQRR leased its property to the operator of the Site, Landfill, Inc., for the purpose of expanding landfill operations. Chicago, Burlington & Quincy Railroad merged with Burlington Northern Railroad, Inc. on March 2, 1970. Burlington Northern Railroad Company (BNRC) is a wholly owned subsidiary of Burlington Northern, Inc. Respondent Burlington Northern Railroad Company is a current land owner at

the Site, and was through its predecessor CBQRR, an owner of real property at the Site during the time of disposal. The Respondent, BNRC, is now the owner of a portion of the Site and is the corporate successor to a prior owner of the Site.

III. CONCLUSIONS OF LAW AND DETERMINATIONS

12. Based on the preceding Findings of Fact and the administrative record for the Site, EPA has made the following conclusions of law and determinations:

- a. The Site is a "facility" as defined in section 101(9) of CERCLA, 42 U.S.C. § 9601(9);
- b. Respondents are "persons" as defined in section 101(21) of CERCLA, 42 U.S.C. § 9601(21);
- c. Respondents are liable parties under sections 104 and 107 of CERCLA, 42 U.S.C. §§ 9604 and 9607, and are subject to this Order under section 106(a) of CERCLA, 42 U.S.C. § 9606(a);
- d. Substances found at the Site are "hazardous substances" as defined in section 101(14) of CERCLA, 42 U.S.C. § 9601(14);
- e. The presence of hazardous substances at the Site and the past, present, or potential future migration of hazardous substances described in Section II of this Order constitutes an actual or threatened "release" as defined in section 101(22) of CERCLA, 42 U.S.C. § 9601(22);
- f. The actual or threatened release of one or more hazardous substances from the facility may present an imminent and substantial endangerment to public health or welfare or the environment; and
- g. The actions required by this Order are necessary to protect the public health and welfare and the environment.
- h. Respondents are qualified to perform the action required under this Order.

IV. NOTICE TO THE STATE

13. EPA has notified the state of Colorado (State) of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), and provided for State involvement in the initiation, development, and selection of the Remedial Action in accordance with section 121(f) of CERCLA, 42 U.S.C. § 9621(f). EPA is the

IV. NOTICE TO THE STATE

13. EPA has notified the state of Colorado (State) of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), and provided for State involvement in the initiation, development, and selection of the Remedial Action in accordance with section 121(f) of CERCLA, 42 U.S.C. § 9621(f). EPA is the lead agency for coordinating, overseeing, and enforcing the response action required by this Order.

V. ORDER

14. Respondents are hereby ordered, jointly and severally to comply with this Order, including but not limited to, all attachments to this Order and all documents incorporated by reference into this Order.

VI. DEFINITIONS

15. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or such regulations. Whenever terms listed below are used in this Order or in the documents attached to this Order or incorporated by reference into this Order, the following definitions shall apply:

"Contractor" means any person, including the contractors, subcontractors, consultants, or agents retained or hired by Respondents to undertake any work under this Order.

"Day" means calendar day. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the end of the next working day. Time will be computed in accordance with Rule 6 of the Federal Rules of Civil Procedure, unless otherwise specified.

"Deliverable" means any written product, including but not limited to, plans, reports, memoranda, data, and other documents that Respondents must submit to EPA under this Order.

"NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan promulgated under Section 105 of CERCLA, 42 U.S.C. § 9605, and codified at 40 C.F.R. Part 300, including any amendments thereto.

"Operable Unit" or "OU" means the 48th and Holly landfill portion of the Sand Creek Industrial Superfund site.

"Operation and Maintenance" or "O&M" means all activities required under the Operation and Maintenance Plan developed by Respondents pursuant to this Order and approved by EPA.

"Order" means this Order, the exhibits attached to this Order, the EPA-approved work plan, and all documents incorporated into this Order by reference or according to the procedures set forth herein.

"Performance Standards" means those cleanup standards, standards of control, and other substantive requirements, criteria or limitations, identified in the Record of Decision and Statement of Work that the Remedial Action and other work performed under this Order must attain and maintain.

"Record of Decision" or "ROD" means the EPA Record of Decision for OU3 and OU6 of the Sand Creek site, signed on June 30, 1993, by the Regional Administrator, EPA Region VIII, and all attachments thereto.

"Remedial Action" or "RA" means those activities, except for operation and maintenance, to be undertaken by Respondents to implement the final plans and specifications submitted by Respondents pursuant to the work plan approved by EPA, including any additional activities required under Sections X, XI, XII, XIII, and XIV of this Order.

"Remedial Design" or "RD" means those activities to be undertaken by Respondents to develop the final plans and specifications for the Remedial Action pursuant to the work plan.

"Response Costs" means all costs, including direct costs, indirect costs, and accrued interest incurred by the United States to perform or support response actions at the Site. Response costs include, but are not limited to, the costs of overseeing the work, such as the costs of reviewing or developing plans, reports, and other items pursuant to this Order, and costs associated with verifying the work.

"Respondents" means Browning-Ferris Industries (BFI) and Burlington Northern Railroad (BNR).

"Statement of Work" or "SOW" means the statement of work attached hereto as Exhibit 2 and incorporated herein by reference.

"Site" means the 48th and Holly landfill portion of the Sand Creek Industrial Superfund Site, OU3 and OU6, encompassing approximately 150 acres in Adams county, near 48th and Holly in Commerce City, Adams county Colorado. The Site is

bordered on the North by East 52nd Avenue, on the South by East 48th Avenue, on the West by Dahlia Street, and on the East by the intersection of the railroad right-of-way and East 48th Avenue, approximately one-quarter mile east of Ivy Street.

"Work" means all activities Respondents are required to perform under this Order, including Remedial Design, Remedial Action, operation and maintenance, and any other activities necessary to fulfill the requirements of this Order.

VII. NOTICE OF INTENT TO COMPLY

16. Respondents shall provide, not later than five (5) days after the effective date of this Order, written notice to the EPA Remedial Project Manager and the EPA Enforcement Section Chief stating whether they will comply with this Order. If Respondents do not unequivocally commit to perform the RD and RA as provided by this Order, they shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Respondents' written notice shall describe, based on facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondents under sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. §§ 9606(b) and 9607(c)(3). The absence of a response by EPA to the notice required by this paragraph shall not be deemed to be acceptance of Respondents' assertions.

VIII. PARTIES BOUND

17. This Order shall apply to and be binding upon Burlington Northern, a Delaware corporation and Browning-Ferris of Colorado, Inc., a Texas corporation (parent of Landfill, Inc.) and their respective directors, officers, employees, agents, successors, and assigns. Respondents are jointly and severally responsible for carrying out all activities required by this Order. No change in the ownership, corporate status, or other control of any Respondent shall alter any of the Respondents' responsibilities under this Order.

18. During the period in which this Order is in effect, Respondents shall provide a copy of this Order to any prospective owners or successors before a controlling interest in Respondents' assets, property rights, or stock is transferred to the prospective owner or successor. Respondents shall provide a copy of this Order to each contractor and laboratory retained to perform any work under this Order, within five (5) days after the effective date of this Order or on the date such services are retained, whichever date occurs later. Respondents shall also provide a copy of this Order to each person representing any

Respondent with respect to the work and shall condition all contracts and subcontracts entered into hereunder upon performance of the work in conformity with this Order. Each contractor retained to perform work shall be deemed to be related by contract to Respondents within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Order and for ensuring that their contractors comply with this Order, and perform any work in accordance with this Order.

19. Within fourteen (14) days after the effective date of this Order each Respondent that owns real property comprising all or part of the Site shall record a copy or copies of this Order in the appropriate governmental office where land ownership and transfer records are filed or recorded, and shall ensure, if possible, that the recording of this Order is indexed to the titles of each and every property at the Site so as to provide notice to third parties of the issuance and terms of this Order with respect to those properties. Respondents shall, within 21 days after the effective date of this Order, send notice of such recording and indexing to EPA.

20. Not later than 30 days prior to any transfer of any real property interest in any property included within the Site, Respondents shall submit a true and correct copy of the transfer document(s) to EPA, and shall identify the transferee by name and principal business address and effective date of the transfer.

IX. WORK TO BE PERFORMED

21. Respondents shall plan, implement, perform, and complete all actions required by this Order in accordance with the standards, criteria, specifications, requirements, and schedule set forth herein. All work under this Order is subject to oversight by and the prior approval of EPA. Undertaking any on-site physical activity without prior approval of EPA is a violation of this Order.

22. All work shall be conducted and completed in accordance with CERCLA, the NCP, pertinent EPA guidance, and any amendments thereto which become effective prior to the date of completion of work under this Order. Respondents shall be responsible for identifying and using other guidelines, policies, procedures, and information that may be appropriate for performing work.

23. All work shall be consistent with the ROD and the Performance Standards set forth in the ROD and the SOW, including all Applicable or Relevant and Appropriate Requirements (ARARs). Notwithstanding any action by EPA, Respondents remain fully responsible for achievement of the Performance Standards. Nothing in this Order, nor in EPA's approval of any document

prepared by EPA under this Order, shall be deemed to constitute a warranty or representation of any kind by EPA that full performance of the RD or RA will achieve Performance Standards. Respondents' compliance with such approved documents does not foreclose EPA from seeking additional work to achieve Performance Standards.

24. Respondents shall employ sound scientific, engineering, and construction practices in performing work under this Order. All tasks shall be under the direction and supervision of qualified personnel with experience in the types of tasks required for implementation of the work.

25. All work shall be under the direction and supervision of a qualified project manager. Within seven (7) days after the effective date of this Order, Respondents shall notify EPA in writing of the name, address, telephone number, and qualifications of the project manager and the identity and qualifications of the primary support entities, staff, and contractors proposed to be used in carrying out work under this Order. If at any time Respondents propose to use a different project manager, support entities, staff, or contractors, Respondents shall notify EPA and provide similar information at least fourteen (14) days before such persons perform any work under this Order.

26. EPA will review Respondents' selection of and changes in project manager, support entities, staff, or contractors according to the terms of this Section and Section XIV of this Order. If EPA disapproves of the selection of a project manager, support entities, staff, or contractors, Respondents shall submit to EPA within fourteen (14) days after receipt of EPA's disapproval, a list of project managers, support entities, staff, or contractors that would be acceptable to Respondents. EPA will thereafter provide written notice to Respondents of the names that are acceptable to EPA. Respondents may then select any approved name or names from that list and shall notify EPA of their selection(s) within fourteen (14) days of receipt of EPA's written notice.

27. Respondents shall, no later than five (5) days prior to any off-site shipment of hazardous substances from the Site to an out-of-state waste management facility, provide written notification of such shipment of hazardous substances to the appropriate state environmental official in the receiving state and to EPA. However, the notification of shipments shall not apply to any off-site shipments when the total volume of all shipments from the Site to the state will not exceed ten (10) cubic yards.

- a. The notification shall be in writing, and shall include the following information: (1) the name and location of the facility to which hazardous substances are to be shipped; (2) the type and quantity of hazardous substances to be shipped; (3) the expected schedule for the shipment of the hazardous substances; and (4) the method of transportation. Respondents shall notify EPA and the receiving state of major changes in the shipment plan, such as a decision to ship the hazardous substances to another facility within the same state or to a facility in another state.
- b. The identity of the receiving facility will be determined by Respondents at the earliest possible time. Respondents shall provide all relevant information, including the information noted above, as soon as practicable after a decision is reached, but in no event later than the time specified in this paragraph.

28. Respondents shall cooperate with EPA in providing information regarding the work to the public. If requested by EPA, Respondents shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

X. FAILURE TO ATTAIN PERFORMANCE STANDARDS

29. In the event that EPA determines that additional response activities are necessary to attain Performance Standards, EPA may notify Respondents that additional response actions are necessary.

30. Unless otherwise stated by EPA, within 30 days of receipt of notice from EPA that additional response activities are necessary to meet Performance Standards, Respondents shall submit for approval by EPA a work plan for the additional response activities. The plan shall conform to the applicable requirements of Sections IX, XVI, and XVII of this Order. Upon EPA's approval of the plan pursuant to Section XIV, Respondents shall implement the plan for additional response activities in accordance with the provisions and schedule contained therein.

XI. EPA PERIODIC REVIEW

31. Under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, EPA may review the Remedial Action to assure that the work performed pursuant to this Order adequately protects human health and the environment. Respondents shall conduct the studies, investigations, or other

response actions determined necessary by EPA for EPA to conduct its review. As a result of any review performed under this paragraph, Respondents may be required to perform additional work or to modify work previously performed.

XII. ADDITIONAL RESPONSE ACTIONS

32. EPA may determine that work, in addition to that identified in this Order, may be necessary to protect human health and the environment. If EPA determines that additional response activities are necessary, EPA may require Respondents to submit a work plan for additional response activities. EPA may also require Respondents to modify any plan, design, or other deliverable required by this Order, including any approved deliverable.

33. Not later than 30 days after receiving EPA's notice that additional response activities are required pursuant to this Section, Respondents shall submit a work plan for the response activities to EPA for review and approval. Upon approval by EPA, the work plan is incorporated into this Order as a requirement of this Order and shall be an enforceable part of this Order. Upon approval of the work plan by EPA, Respondents shall implement the work plan according to the standards, specifications, and schedule in this Order and the approved work plan. Respondents shall notify EPA of their intent to perform such additional response activities within seven (7) days after receipt of EPA's request for additional response activities.

XIII. ENDANGERMENT AND EMERGENCY RESPONSE

34. In the event of any action or occurrence during the performance of the work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify EPA. If the EPA Remedial Project Manager is not available, Respondents shall notify the EPA Emergency Response Branch, EPA Region VIII. Respondents shall take such action in consultation with the EPA Remedial Project Manager and in accordance with all applicable provisions of law and of this Order. In the event that Respondents fail to take appropriate response action as required by this Section, and EPA takes action instead, Respondents shall reimburse the United States for all costs of the response action not inconsistent with the NCP. Respondents shall pay the response costs in the manner described in Section XXII of this Order.

35. Nothing in the preceding paragraph shall be deemed to limit any authority of the United States to take, direct, or order any action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

XIV. EPA REVIEW OF DELIVERABLES

36. After review of any deliverable which must be submitted for review and approval pursuant to this Order, EPA may: (a) approve the submission, (b) approve the submission with its own modifications, (c) disapprove the submission and direct Respondents to re-submit the document after incorporating EPA's comments, or (d) disapprove the submission and assume responsibility for performing all or any part of the response action. As used in this Order, the terms "approval by EPA," "EPA approval," or similar term means the action described in phrases (a) or (b) of this paragraph.

37. In the event of approval or approval with modifications by EPA, Respondents shall proceed to take any action required by the deliverable, as approved or modified by EPA.

38. Upon receipt of a notice of disapproval or a request for a modification, Respondents shall, within seven (7) days or such time as specified by EPA in its notice of disapproval or request for modification, correct the deficiencies and resubmit the deliverable for approval. Notwithstanding the notice of disapproval, or approval with modification, Respondents shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the deliverable.

39. Any failure of Respondents to obtain full approval of a deliverable when required is a violation of this Order.

XV. REPORTING REQUIREMENTS

40. Respondents shall submit to EPA and the State monthly progress reports containing, at a minimum, the following information:

- a. A description of actions taken to comply with this Order, including plans and actions completed, during the previous month;
- b. A description of problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to mitigate any problems or delays;
- c. Any change orders, nonconformance reports, claims made, and actions taken to rectify problems;
- d. Work planned for the next month with schedules relating such work to the overall project schedule for RD/RA completion, and;
- e. Except for information previously submitted, copies of inspection logs and results of all sampling, tests, and other data (including validated analytical data with supporting documentation on Contract Laboratory Program Form I's or in a similar format) received or produced by Respondents during the course of work during the previous month.

These reports shall be submitted on or before the 10th day of each month from the effective date of the Order and each month thereafter until EPA determines that reports are no longer required.

41. During construction, Respondents shall prepare daily and weekly reports on construction activities discussing, at a minimum, the daily activities, field adjustments, change orders, summaries of problems and actions to rectify problems, and such information as is customary in the industry. The daily reports and the weekly report shall be compiled and delivered to EPA and the State each week on the day specified by the EPA Remedial Project Manager.

42. Respondents shall prepare and submit to EPA and the State O&M reports that include, at a minimum, the following elements:

- a. A description of O&M activities performed during the reporting period;

- b. A description of the performance of each component of the Remedial Action requiring O&M, including a summary of any monitoring data demonstrating the performance of the remedy and its effectiveness in meeting Performance Standards;
- c. A description and summary of the results of all monitoring performed in connection with the remedy;
- d. A statistical evaluation of the monitoring data and a conclusion as to whether the results exceed appropriate criteria, and whether any exceedances necessitate the implementation of contingency measures;
- e. Identification of any problems or potential problems and a description of all steps taken or to be taken to rectify the problems;
- f. An appendix containing all validated data and supporting documentation on Contract Laboratory Program Form I's or in a similar format collected during the reporting period and not previously submitted; and
- g. Copies of any O&M training materials and a record of employee attendance at training sessions.

O&M reports shall be submitted semi-annually on or before the 10th day of June and December and continuing until EPA notifies Respondents that the frequency of reporting may be reduced.

43. Respondents shall prepare and submit the periodic review reports described in the SOW. These reports shall be due, at a minimum, on January 1, 1995, and on the same date every five years thereafter.

XVI. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

44. Respondents shall ensure that work performed, samples taken, and analyses conducted conform to the requirements of this Order and the EPA-approved sampling and analysis plan. Respondents will ensure that their field personnel are properly trained in the use of field equipment and chain-of-custody procedures.

45. To provide quality assurance and maintain quality control, Respondents shall:

- a. Use only laboratories which have a documented Quality Assurance Program that complies with EPA guidance document QAMS-005/80;
- b. Ensure that any laboratory used performs analyses according to a method or methods deemed satisfactory by EPA and submits all protocols to be used for analyses to EPA at least 30 days before beginning analysis;
- c. Ensure that EPA personnel or authorized representatives are allowed access to the laboratory and personnel used by Respondents for analyses; and
- d. Upon EPA request, have such laboratories analyze samples submitted by EPA for quality-assurance monitoring. *gw*

46. Respondents shall notify EPA in writing not less than fourteen (14) days prior to any sample collection activity. At the request of EPA, Respondents shall allow split or duplicate samples to be taken by EPA or its authorized representatives of any samples collected by Respondents with regard to the Site or pursuant to the implementation of this Order. In addition, EPA and/or its authorized representatives shall have the right to take any other samples that EPA deems necessary.

XVII. COMPLIANCE WITH APPLICABLE LAWS

47. All work shall be performed in accordance with the requirements of all federal and State laws and regulations. Except as provided in section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and the NCP, no permit shall be required for any portion of the work conducted entirely on-site. Where any portion of the work requires a federal or State permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

48. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or State statute or regulation.

49. All materials removed from the Site shall be disposed of or treated at a facility approved by EPA and in accordance with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3); with EPA's "Revised Off-site Policy," OSWER Directive 9834.11 (Nov. 13, 1987); and with all other applicable federal, State, and local requirements.

XVIII. REMEDIAL PROJECT MANAGER AND ENFORCEMENT SECTION CHIEF

50. The EPA Remedial Project Manager is:

Erna Acheson, 8HWM-SR
EPA Region VIII
999 18th Street, Suite 500
Denver, Colorado 80202-2405
(303) 294-1971

The Enforcement Section Chief is:
Elisabeth Evans
Enforcement Section Chief 8HWM-SR
EPA Region VIII
999 18th Street, Suite 500
Denver, Colorado 80202-2405

EPA may change its Remedial Project Manager at any time and will inform Respondents of such a change.

51. The EPA Remedial Project Manager shall have the authority lawfully vested in a Remedial Project Manager and On-Scene Coordinator by the NCP. The EPA Remedial Project Manager shall have authority, consistent with the NCP, to halt any work required by this Order, and to take any necessary response action.

52. All communications, whether written or oral, from Respondents to EPA shall be directed from Respondents' project manager to the EPA Remedial Project Manager. Respondents shall submit to EPA three copies of all documents, including plans, reports, and other correspondence, which are developed pursuant to this Order, and shall hand-deliver or send these documents by certified mail, return receipt requested, or overnight mail.

XIX. ACCESS AND DATA/DOCUMENT AVAILABILITY

53. Respondents shall allow EPA and its authorized representatives to enter and move freely about any and all property owned or controlled by Respondents at the Site and off-site areas subject to or affected by the work under this Order or where documents required to be prepared or maintained by this Order are located, for the purposes of inspecting conditions, activities, the results of activities, records, operating logs,

and contracts related to the Site or Respondents and their representatives or contractors pursuant to this Order; reviewing the progress of Respondents in carrying out the terms of this Order; conducting tests as EPA or its authorized representatives deem necessary; using a camera, sound recording device or other documentary type equipment; and verifying the data submitted to EPA by Respondents. Respondents shall allow EPA and its authorized representatives to enter the Site, to inspect and copy all records, files, photographs, documents, sampling and monitoring data, and other writings related to work undertaken in carrying out this Order. Nothing herein shall be interpreted as limiting or affecting EPA's right of entry or inspection authority under federal law.

54. If the Site, any off-Site area that is to be used for access, property where documents required to be prepared or maintained by this Order are located, or other property subject to or affected by the RD or RA, is owned in whole or in part by parties other than those bound by this Order, Respondents will obtain, or use their best efforts to obtain, Site access agreements from the present owner(s) within 30 days of the effective date of this Order.

- a. Respondents' best efforts shall include providing reasonable compensation to any off-Site property owner.
- b. Access agreements shall provide access for EPA and its authorized representatives and Respondents and their contractors and shall specify that Respondents are not EPA's representatives with respect to the Site or Site activities.
- c. Copies of such agreements shall be provided to EPA prior to Respondents' initiation of field activities. If access agreements are not obtained within the time referenced above, Respondents shall immediately notify EPA of its failure to obtain access.

Subject to the United States' non-reviewable discretion, EPA may use its legal authorities to obtain access for Respondents, may perform response actions with EPA contractors, or may terminate the Order if Respondents cannot obtain access agreements. Respondents shall reimburse EPA, pursuant to Section XXII of this Order, for all response costs (including attorney fees) incurred by the United States to obtain access for Respondents. If EPA performs tasks or activities with contractors and does not terminate the Order, Respondents shall perform all other activities not requiring access to that property, and shall reimburse EPA, pursuant to Section XXII of this Order, for all costs incurred in performing such activities. Respondents shall

integrate the results of any such tasks undertaken by EPA into the work they perform under this Order.

55. Respondents shall provide to EPA, upon request, copies of all documents and information within their possession and/or control or that of their contractors relating to activities at the Site or to the implementation of this Order, including but not limited to, sampling, analysis, chain-of-custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the work. Respondents shall also make available to EPA for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the work.

56. Respondents may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this Order under 40 C.F.R. § 2.203, provided such claim is not inconsistent with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), or other provisions of law. This claim shall be asserted in the manner described by 40 C.F.R. § 2.203(b) and substantiated by Respondents at the time the claim is made. Information determined to be confidential by EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Respondents.

XX. RECORD PRESERVATION

57. For a period of 10 years after work is completed under this order, each Respondent shall preserve and retain all records and documents in its possession or control and in the possession or control of its contractors, on and after the date of signature of this Order, that relate in any manner to the Site, Respondents' potential liability under CERCLA, or performance of work under this Order. At the conclusion of this document-retention period, Respondents shall notify the United States at least 90 days prior to the destruction of any such records or documents, and upon request by the United States, Respondents shall deliver any such records or documents to EPA at no cost to EPA.

XXI. ASSURANCE OF ABILITY TO COMPLETE WORK

58. Respondents shall demonstrate their ability to complete the work required by this Order and to pay all claims that arise from the performance of the work by obtaining and presenting to EPA, within 30 days after EPA approval of the work plan one of the following: (1) a performance bond; (2) a letter of credit in the amount of 7.5 million dollars; (3) a guarantee by a third

party; or (4) internal financial information to allow EPA to determine that Respondents have sufficient assets available to perform the work. Respondents shall demonstrate financial assurance in an amount no less than the estimate of cost for the RD and RA contained in the ROD. If Respondents seek to demonstrate ability to complete the RA by means of internal financial information, or by guarantee of a third party, they shall re-submit such information annually, on the anniversary of the effective date of this Order. If EPA determines that such financial information is inadequate, Respondents shall, within 30 days after receipt of EPA's notice of determination, obtain and present to EPA for approval one of the other three forms of financial assurance listed above.

59. At least seven (7) days prior to commencing any physical on-site activity at the Site pursuant to this Order, Respondents shall submit to EPA a certification that Respondents or their contractors have adequate insurance coverage or have indemnification for liabilities for injuries or damages to persons or property which may result from the activities to be conducted by or on behalf of Respondents pursuant to this Order. Respondents shall ensure that such insurance or indemnification is maintained for the duration of the work required by this Order.

XXII. REIMBURSEMENT OF RESPONSE COSTS

60. Respondents shall reimburse EPA, upon written demand, for all response costs incurred by the United States in connection with this Order. EPA may submit to Respondents on a periodic basis an accounting of such costs. The accounting shall consist of a cost summary. Within 30 days of receipt of each EPA accounting, Respondents shall remit a certified or cashier's check for the amount set forth in the accounting, plus interest. Interest shall accrue from the later of the date that payment of a specified amount is demanded in writing or the date of the expenditure. The interest rate is the rate established by the Department of the Treasury pursuant to 31 U.S.C. § 3717 and 4 C.F.R. § 102.13.

61. Checks shall be made payable to the "Hazardous Substance Superfund" and shall be forwarded to:

Mellon Bank
EPA Region VIII
Attn: Superfund Accounting
Post Office Box 360859M
Pittsburgh, Pennsylvania 15251

or other such address as EPA may designate in writing, with a copy simultaneously sent to:

EPA Cost Recovery Program Manager
Superfund Enforcement Section (8HWM-SR)
U.S. Environmental Protection Agency
999 18th Street, Suite 500
Denver, Colorado 80202-2466

Payments must be designated as "Response Costs-Sand Creek Site, OU3 and OU6 and include the payor's name and address, the Site identification number 14, and the docket number of this Order. Respondent shall send copies of each transmittal letter and check to the EPA Remedial Project Manager at the time of payment.

XXIII. UNITED STATES NOT LIABLE

62. The United States, by issuance of this Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order. Neither EPA nor the United States may be deemed to be a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order.

63. Respondents shall save and hold harmless the United States and its officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action or other costs incurred by the United States, including but not limited to, attorneys fees and other expenses of litigation and settlement arising from or on account of acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Order, including any claims arising from any designation of Respondents as EPA's authorized representative(s) under section 104(e) of CERCLA, 42 U.S.C. § 9604(e).

XXIV. ENFORCEMENT AND RESERVATIONS

64. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to the Site and not reimbursed by Respondents. This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support the oversight cost demand, as well as accrued interest as provided in § 107(a) of CERCLA, 42 U.S.C. § 9607(a).

65. Notwithstanding any other provision of this Order, at any time during the response action, EPA may perform its own studies, complete the response action (or any portion of the response action) as provided in CERCLA and the NCP, and seek reimbursement from Respondents for its costs, or seek any other appropriate relief.

66. Nothing in this Order shall preclude EPA from taking any additional enforcement actions, including modification of this Order or issuance of additional Orders, and/or additional Remedial or Removal actions as EPA may deem necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law.

67. Notwithstanding any provision of this Order, the United States hereby retains all of its information gathering, inspection, and enforcement authorities and rights under CERCLA, RCRA and any other applicable statutes or regulations.

68. Respondents shall be subject to civil penalties under Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than \$25,000 for each day in which Respondents willfully violate, or fail or refuse to comply with this Order without sufficient cause. In addition, failure to provide response action properly under this Order, or any portion hereof, without sufficient cause, may result in liability under § 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount at least equal to, and not more than three times the amount of any costs incurred by the Fund as a result of such failure to take proper action.

69. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person for any liability it may have arising out of or relating in any way to the Site.

70. If a court issues an order that invalidates any provision of this Order or finds that Respondents have sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

XXV. EFFECTIVE DATE AND COMPUTATION OF TIME

71. This Order shall be effective 10 days after the Order is signed. All times for performance of ordered activities shall be calculated from this effective date.

XXVI. OPPORTUNITY TO CONFER

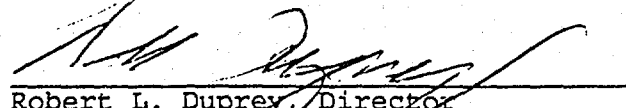
72. Respondents may, within ten (10) days after the date this Order is signed, request a conference with EPA to discuss this Order. The conference shall be limited to discussion of issues involving the implementation of the response actions required by this Order and the extent to which Respondents intends to comply with this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondents a right to seek review of this Order, or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any conference held pursuant to Respondents' request, Respondents may appear in person or by an attorney or other representative.

73. Requests for a conference must be by telephone followed by written confirmation mailed that day to:

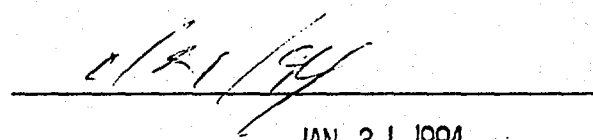
William Clemmens, 8ORC
Assistant Regional Counsel
EPA Region VIII
999 18th Street, Suite 500
Denver, Colorado 80202-2405
(303) 294-7587

IT IS SO ORDERED

BY:


Robert L. Duprey, Director
Hazardous Waste Management Division
U.S. Environmental Protection Agency

DATE:



EFFECTIVE DATE:

JAN 31 1994

CERTIFICATE OF SERVICE

I, _____, hereby certify that being
a person 18 years of age or older, I have delivered (an original)
(a copy) of the attached _____

Name of Document

(check one)

in person

by registered mail

by other method

by leaving/ mailing a copy of the document at the principal
place of business of the party to be served, which is _____

_____ on _____, 1993.

Signature _____

Name _____

Title _____

CERTIFICATE OF SERVICE

I, _____, hereby certify that being
a person 18 years of age or older, I have delivered (an original)
(a copy) of the attached _____

Name of Document

(check one)

in person

by registered mail

by other method

by leaving/ mailing a copy of the document at the principal
place of business of the party to be served, which is _____

_____ on _____, 1993.

Signature _____

Name _____

Title _____

STATEMENT OF WORK
REMEDIAL DESIGN / REMEDIAL ACTION
SAND CREEK SUPERFUND SITE
OPERABLE UNITS 3/6

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STATEMENT OF WORK
REMEDIAL DESIGN / REMEDIAL ACTION
SAND CREEK SUPERFUND SITE
OPERABLE UNITS 3/6

I. INTRODUCTION

A. PURPOSE OF THE STATEMENT OF WORK

This Statement of Work (SOW) has been prepared to establish the requirements for the Remedial Design/Remedial Action (RD/RA) program to be performed by the Respondents at the Sand Creek Superfund Site, 48th and Holly Landfill (the Landfill), Commerce City, Colorado, pursuant to Unilateral Administrative Order, Docket No. CERCLA VIII-93-27. This SOW details the procedures, tasks, and schedule that shall be followed by the Respondents in performing the selected remedial measures.

B. SITE DESCRIPTION

The Site shall refer to the definition of "the Landfill" as provided in the Unilateral Administrative Order and as described more fully in the Record of Decision (ROD).

C. PERFORMANCE STANDARDS

Performance Standards shall include cleanup standards, standards of control, quality criteria, and other substantive requirements, criteria, or limitations set forth in the ROD. These Performance Standards shall be found in the OU3/6 ROD.

II. ROLE OF EPA - EPA APPROVAL

Pursuant to Section IX of the Unilateral Administrative Order, EPA retains the right to approve or disapprove submittals during Remedial Design and Remedial Action. This action is administrative in nature to allow the Respondents to proceed to the next step in implementing the site remedy. This action may be taken for contractors, plans and specifications, processes, and other submittals within the context of the Unilateral Administrative Order. It does not imply any warranty of performance or that the remedy, when constructed, will meet Performance Standards or will function properly and be accepted.

III. SCOPE OF WORK TO BE PERFORMED

A. OBJECTIVES OF REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA)

The purpose of the RD/RA program is to ensure that:

- * Emissions of landfill gas are controlled to prevent inhalation at levels that pose an endangerment to human health or the environment.
- * Accumulation of landfill gas is minimized to prevent explosion hazards.
- * Dermal contact with landfill contents is prevented.
- * The use of groundwater underlying the Landfill as a drinking water source is prevented.

Based on these objectives the Respondent will develop the RD/RA Work Plan which includes the following items:

- . Introduction
- . Project Participants
- . RD/RA Tasks
- . Operation & Maintenance
- . Maps Detailing, the Locations of Groundwater Monitoring Wells
- . Reporting and Schedule
- . Cost Summary
- . Health and Safety Plan - The Respondents will continue with and comply with the existing Health and Safety Plan which was in place during the Remedial Investigation/Feasibility Study and Removal Action work.

B. RD/RA TASKS

The remedial measures shall consist of the following tasks:

- Task 1 - Continue Operation and Maintenance (O&M) of the landfill gas-extraction system (LFGES) with improvements, as required, during the normal course of O&M activities.
- Task 2 - Continue maintenance of the soil cover system with improvements, as required, during the normal course of O&M activities.

- Task 3 - Continue maintenance of the perimeter fence and warning signs.
- Task 4 - Implement an environmental monitoring program.
- Task 5 - Continue existing institutional controls and implement additional institutional controls, as necessary.
- Task 6 - Conduct periodic site reviews.

The Respondents shall perform Tasks 1 through 4 consistent with the U.S. Environmental Protection Agency (EPA)-issued Record of Decision (ROD) and the schedules, specifications, and reporting requirements identified in this document and in the associated Unilateral Administrative Order. The Respondents shall also cooperate with EPA, as required, in the performance of Tasks 5 and 6.

C. OPERATION AND MAINTENANCE (O&M)

The Respondents shall perform and document the tasks described in Section B above in accordance with the plans and schedules detailed elsewhere in this document.

1. Landfill Gas-extraction System

Since the May 31, 1991 startup of the system, the LFGES has been in continuous operation except for brief periodic maintenance activities. After the first year ("shakedown") of operations, routine O&M of the LFGES was established. The Respondents shall continue O&M of the LFGES in accordance with the manufacturer's specifications and the EPA-approved final O&M Manual (1991), as amended. LFGES performance shall be monitored as part of the environmental monitoring program as specified in this SOW. The Respondents shall evaluate and implement, if necessary, improvements to the LFGES during the normal performance of O&M activities. Continuous operation of the LFGES may be modified, with EPA approval, if the monitoring data show that methane gas levels in the perimeter gas monitoring probes are below levels of regulatory concern.

2. Soil Cover System

Site improvement activities, including fill placement, erosion control, and reclamation, were undertaken at the Landfill during spring 1992 to enhance the integrity of the soil cover system, improve general erosion control and site

appearance, and improve O&M of the LFGES by reducing infiltration of ambient air into the Landfill. The Respondents shall continue maintenance of the soil cover system with the following activities:

- Periodic visual inspection of the cover during routine LFGES O&M activities at the Landfill
- Spot reseeding of areas as required to maintain grass cover
- Mowing as required to maintain grass cover and control weeds

The Respondents shall evaluate and implement, if necessary, improvements to the soil cover system during the normal performance of O&M activities.

3. Fencing

The Landfill is currently fenced with three-strand, smooth wire that was installed in August 1991. Warning signs are posted around the entire perimeter of the fence. The Respondents shall continue maintenance of the fence by performing the following activities, as needed

- Maintaining/repairing fence posts
- Repairing cut strands of wire
- Replacing warning signs

4. Environmental Monitoring Program

The Respondents shall implement an environmental monitoring program, which consists of (1) landfill gas monitoring and (2) groundwater monitoring. Data from both components of the monitoring program will support assessment of landfill conditions and LFGES performance. In addition, the data will be used to assess the site and ongoing remedial measures during the periodic site reviews. The appropriate reports as identified in Section IV of this SOW shall be submitted to document the activities and data resulting from the monitoring program.

a. Landfill Gas Monitoring

The landfill gas monitoring component of the environmental monitoring program was implemented with the startup of the LFGES on May 31, 1991. Landfill gas monitoring is required to evaluate the operation and performance of the LFGES and to ensure the effectiveness and continued safe operation of the system. On the basis of such monitoring, operational modifications may be made to the LFGES to

ensure the system extracts sufficient landfill gas to minimize vertical and horizontal migration and intrusion of atmospheric air into the Landfill. The existing landfill gas monitoring network of 28 gas monitoring probes located along the perimeter of the Landfill shall continue to be monitored to evaluate the performance of the LFGES and monitor for migration of landfill gas. Gas monitoring probes shall be monitored for percent methane and well pressure on a monthly basis to evaluate the effectiveness of the system and to modify operations to ensure prevention of lateral migration of gas in accordance with the EPA-approved final O&M Manual, as amended. Upon EPA review of the five year reviews, with EPA approval, if emissions from the landfill gas no longer pose an endangerment to human health and the environment, the LFGES and landfill gas monitoring may be modified or terminated. To achieve safe and efficient operation, the following parameters shall be monitored at least monthly at the following locations:

At each extraction well:

- Vacuum
- Gas temperature
- Methane concentration

At the flare:

- Gas flow rate
- Methane
- Flare temperature

Building inlet sample ports (on main header):

- Gas temperature
- Inlet vacuum

b. Groundwater Monitoring

The purpose of the groundwater monitoring component of the environmental monitoring program is to provide on a continuing basis a means by which potential impacts of the Landfill to groundwater quality can be assessed. Three existing upgradient and six existing downgradient wells will be sampled and measured for water levels semi-annually to provide a basis for comparison with previous results. The monitoring program will also include collecting one

groundwater discharge to surface-water sample semi-annually from the spring discharge.

Groundwater sampling locations include wells hydraulically upgradient and downgradient of the Landfill completed within Aquifer 0 and 2, the alluvial aquifers directly underlying the majority of the Landfill. Sampling locations were selected to provide a wide geographic distribution of monitoring locations along the perimeter of the Landfill. Sampling locations for the groundwater monitoring program are listed below.

- **Upgradient of the Landfill**
 - Aquifer 0 - two existing wells (L-2 and FIT-MW3)
 - Aquifer 2 - one existing well (SC-2B)
- **Downgradient of the Landfill**
 - Aquifer 0 - three existing wells (L-14, L-4, and L-15)
 - groundwater discharge to surface-water sample
 - Aquifer 2 - three existing wells (SC-9B, L-3, and SC-5B)

The analytical program and associated statistical evaluation will be established during the RD phase. After two years of monitoring, the constituents and monitoring locations may be modified, with EPA approval, if the statistical evaluation of pertinent groundwater monitoring data shows no significant degradation of groundwater quality directly attributable to the Landfill. The Respondents shall review the Quality Assurance Project Plan (QAPP) approved by EPA and propose any recommended changes to EPA. Therefore, groundwater sampling and analysis activities shall be conducted in conformance with a current EPA approved QAPP.

c. Well Abandonment Plan

The Respondent shall develop a Well Abandonment Plan that must contain the following:

- Recommended Groundwater Wells for abandonment
- Rationale for Abandonment
- Procedures used to abandon the well
- Procedures for disposal of contaminated well materials (if appropriate)
- Schedule for well abandonment

Additionally, a report shall be generated to describe the well abandonment results.

5. Institutional Controls

The primary purposes of institutional controls are to (1) protect the integrity of the soil cover system to prevent dermal or direct contact with the Landfill contents, (2) prevent the use of the groundwater underlying the Landfill as a drinking water source, and (3) protect the LFGES. Existing institutional controls identified in the ROD will be maintained. Additional controls will be implemented, if necessary, to ensure the RD/RA program objectives are met.

6. Site Reviews

The Respondents shall prepare a review every 5 years, evaluating the effectiveness of the remedy. The report shall include a summary of remedial activities conducted under this SOW and an interpretation of monitoring data collected under this SOW during the proceeding five years relative to the 48th and Holly Landfill. The first report will be submitted on or prior to September 25, 1995 (i.e., three months prior to the first five-year Sand Creek Site Review). Subsequent five year review reports will be due on the same day of the year every five years thereafter until completion of the obligations under the Unilateral Administrative Order and this SOW.

IV. REPORTING

The Respondents shall prepare the following reports:

A. REMEDIAL DESIGN REPORT

The Respondents shall submit the draft and final Remedial Design to EPA for review. The Remedial Design will describe the Respondents's plan for implementation of the Remedial Action within the terms and conditions of the Unilateral Administrative Order and this Statement of Work. It will contain at a minimum the following elements:

- Description of the work and field operations as specified in this SOW.
- Schedule of Remedial Action activities.
- Identification of the Remedial Action Team for construction management, including the key personnel, descriptions of duties, and lines of authority.

B. O & M REPORTS

O & M reports will be submitted semiannually to EPA for review. The O & M reports will include, at a minimum, the following elements:

- A description of O & M activities performed during the reporting period;
- A description of the performance of each component of the Remedial Action requiring O & M, including a summary of any monitoring data demonstrating the performance of the remedy and its effectiveness in meeting Performance Standards;
- A description and summary of the results of all monitoring performed in connection with the remedy;
- A statistical evaluation of the groundwater monitoring data and a conclusion as to whether the results exceed appropriate criteria, and whether any exceedances necessitate the implementation of contingency measures;
- Identification of any problems or potential problems and a description of all steps taken or to be taken to rectify the problems;
- An appendix containing all validated data and supporting documentation on Contract Laboratory Program Form I's or in a similar format for groundwater samples collected during the reporting period and not previously submitted; and
- Groundwater Monitoring Data in a format suitable for input into the Sand Creek Groundwater Data Base.

C. REMEDIAL ACTION COMPLETION REPORT

Once the remedy is performing according to design specifications, the Respondents shall submit the draft Site Remedial Action Completion Report (Completion Report) to the EPA for review. The process for documentation of Site completion is provided in OSWER Directive 9320.2-3A Procedures for Completion and Deletion of NPL Sites, April, 1989, and updated December, 1989. In addition, if available, the respondents will utilize the most current EPA guidance in preparing this report. Thirty days after EPA has reviewed the draft Completion Report, the Respondents shall submit the final Completion Report.

D. FIVE YEAR REVIEW REPORT

As described in Section 6 on Page 6, the Respondents shall prepare a review every 5 years, evaluating the effectiveness of the remedy. The Report shall include a summary of remedial activities conducted under this SOW and an interpretation of monitoring data collected under this SOW and an interpretation of monitoring data collected under this SOW during the preceding five years relative to the 48th and Holly Landfill. The first report will be submitted on or prior to September 25, 1995 (i.e., three months prior to the first five-year Sand Creek Site Review). Subsequent five year review reports will be due on the same day of the year every five years thereafter until completion of the obligations under the Unilateral Administrative Order and this SOW. The Respondents shall cooperate with EPA, if requested, regarding the implementation of additional institutional controls identified in the ROD.

Schedule of Respondents Deliverables

<u>Deliverable</u>	<u>Due Date</u>
Notice that Respondents will comply with the UAO	Within 5 days after the effective date of UAO
Notification Designating Project Manager, Staff and Contractors	Within 7 days after the effective date of the UAO
Notification of changes in Project Manager, Staff or Contractors	At least 7 days prior to their Performing any Work
O & M Reports	In accordance with the RD
Five Year Review Reports	On September 25, 1995 and on the same date every five years thereafter
Draft RD/RA Work Plan (WP) Well Abandonment Plan Remedial Design	Within 90 days after the effective date of the UAO
Final RD/RA WP Well Abandonment Plan Remedial Design	Within 14 days after EPA review and comment on draft
Draft Remedial Action Completion Report	Within 45 days after EPA approval of the RD/RA WP
Final Remedial Action Completion Report	Within 30 days after EPA review and comment on draft Completion Report