IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF KANSAS

UNITED STATES OF AMERICA	)	
	)	
Plaintiff,	)	
	)	
v.	)	
	)	CIVIL ACTION NO. 08-CV-01316-WEB-DWB
BLUE TEE CORP.	)	
GOLD FIELDS MINING LLC,	)	
and	)	
THE DOE RUN RESOURCES	)	
CORPORATION (formerly known as	)	
St. Joe Minerals Corporation),	)	
	)	
Defendants.	)	
	)	
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CONSENT DECREE

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CONSENT DECREE

I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9606, 9607; and under Section 7003 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973.

B. The United States in its complaint seeks, inter alia: (1) reimbursement of costs incurred by EPA and the Department of Justice for response actions at Operable Unit (OU) #04 (the Treece subsite) (hereinafter, "Subsite") of the Cherokee County, Kansas Superfund Site, together with

accrued interest; and (2) performance of studies and response work by the defendants at the Subsite consistent with the NCP as defined in Section IV of this Consent Decree.

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of Kansas (the "State") on February 14, 2008 of negotiations with the defendants that have entered into this Consent Decree ("Settling Defendants") regarding the implementation of remedial design and remedial action for the Subsite, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the United States Department of the Interior on February 14, 2008 of negotiations with the Settling Defendants regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Consent Decree.

E. The Settling Defendants negotiated with EPA to implement the remedial design and remedial action described in this Consent Decree.

F. Settling Defendants do not admit any liability to the Plaintiff arising out of the transactions or occurrences alleged in the complaint, nor do they acknowledge that the release or threatened release of hazardous substance at or from the Subsite constitutes an imminent or substantial endangerment to the public health or welfare or the environment. While Plaintiff asserts that Defendant, the Doe Run Resources Corporation ("Doe Run"), is liable for the acts and omissions of Kansas Exploration, Inc., Doe Run does not admit any such liability.

G. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Subsite on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 8, 1983, 48 Fed. Reg. 40658.

H. Pursuant to an Administrative Order on Consent dated May 7, 1990 (U.S. EPA Docket No. VII-90-F-0010), Amax, Inc.; Gold Fields American Corporation; ASARCO Incorporated; NL Industries, Inc.; Eagle-Picher Industries, Inc.; St. Joe Minerals Corporation; and Sun Company, Inc., completed in June 1994 a Remedial Investigation and Feasibility Study ("1994 RI/FS") for OU #03 and OU #04 pursuant to 40 C.F.R. § 300.430.

I. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the 1994 RI/FS and of the proposed plan for remedial action in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting was made available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

J. The decision by EPA on the remedial action to be implemented at the Baxter Springs Subsite and the Treece Subsite was embodied in a final Record of Decision, executed on August 20, 1997 ("1997 ROD"). The 1997 ROD included EPA's explanation for any significant differences between the final plan and the proposed plan as well as a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

K. Pursuant to a January 12, 2000 Consent Decree (“2000 Consent Decree”), (U.S.D.Ct. of Kansas, Civ. Action No. 99-1399-WEB), ASARCO Incorporated; Cyprus Amax Minerals Company; NL Industries, Inc.; Sun Company; Gold Fields Mining Corporation; Blue Tee Corp.; and The Doe Run Resources Corporation commenced certain response actions in accordance with the 1997 ROD for the Baxter Springs Subsite and the Treece Subsite, and completed those response actions on October 1, 2004. The 2000 Consent Decree contained a reservation of rights for the Plaintiff, the United States, for “Potential Ecological Remedial Actions in the Tar Creek Drainage Basin in the Treece Subsite.”

L. Subsequent to the 2004 completion of the response actions (except for operation and maintenance) in accordance with the 1997 ROD, EPA in 2006 completed a second RI/FS report (“2006 RI/FS”) for the Baxter Springs Subsite and Treece Subsite. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the 2006 RI/FS and of the proposed plan for a Record of Decision amendment for the Baxter Springs and Treece Subsites in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

M. The decision by EPA on the remedial action to be implemented at the Baxter Springs Subsite and the Treece Subsite was embodied in a final Record of Decision amendment, executed September, 2006 ("2006 ROD" or “ROD”). The 2006 ROD included EPA's explanation for any significant differences between the final plan and the proposed plan as well

as a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

N. Based on the information presently available to EPA, EPA believes that the Work (as defined in Section IV of this Consent Decree) will be properly and promptly conducted by the Settling Defendants if conducted in accordance with the requirements of this Consent Decree and its appendices. Solely for the purposes of Section 113(j) of CERCLA, the Remedial Action selected by the 2006 ROD and the Work to be performed by the Settling Defendants shall constitute a response action taken or ordered by the President.

O. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and implementation of this Consent Decree will expedite the remediation of the Subsite and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Decree and the underlying complaint, Settling Defendants waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Defendants shall

not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the United States and upon Settling Defendants and their successors and assigns. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Settling Defendant's responsibilities under this Consent Decree.

3. Settling Defendants shall provide a copy of this Consent Decree to each contractor hired to perform the Work required by this Consent Decree and to each person representing any Settling Defendant with respect to the Site or the Work and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. Settling Defendants and/or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Settling Defendants shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3), with the Settling Defendant(s) which hired said contractor or subcontractor or whose contractor hired that subcontractor.

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Decree or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq*.

"Consent Decree" shall mean this Consent Decree and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Consent Decree and any appendix, this Consent Decree shall control.

"Day" shall mean a calendar day unless expressly stated to be a working day. "Working Day" shall mean a day other than a Saturday, Sunday, or federal holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

"Effective Date" shall be the effective date of this Consent Decree as provided in Paragraph 105.

"EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

"KDHE" shall mean the Kansas Department of Health and Environment, and any successor departments or agencies of the State of Kansas.

"Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Sections VII, IX (including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement institutional controls relating to Operation and Maintenance **(**but not to county-wide controls), including, but not limited to, the amount of just compensation), XV, and Paragraph 87 (Work Takeover) of Section XXI. Future Response Costs shall also include all Interim Response Costs.

"Interim Response Costs" shall mean all costs, including direct and indirect costs, (a) paid by the United States in connection with the Site between February 1, 2008 and the Effective Date, or (b) incurred between February 1, 2008 and the Effective Date but paid after that date.

"Interest," shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

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

"Operation and Maintenance" or "O & M" shall mean all activities required to maintain the effectiveness of the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to this Consent Decree and the Statement of Work (SOW).

"Paragraph" shall mean a portion of this Consent Decree identified by an arabic numeral or an upper case letter.

"Parties" shall mean the United States and the Settling Defendants.

"Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid at or in connection with the Site during the period from October 1, 2004 to January 31, 2008, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a) through the Effective Date.

"Performance Standards" shall mean the cleanup standards and other measures of achievement of the goals of the Remedial Action, set forth in the Remedial Action Objectives in Section I and in Table 2 of the ROD.

"Plaintiff" shall mean the United States.

"RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 *et seq*. (also known as the Resource Conservation and Recovery Act).

"Record of Decision" or "ROD" shall mean the EPA Record of Decision amendment relating to the OU-3 and OU-4 of the Cherokee County Superfund Site signed September, 2006, by the Regional Administrator, EPA Region VII, or his/her delegate, and all attachments thereto. The ROD is attached as Appendix A.

"Remedial Action" shall mean those activities, except for Operation and Maintenance, to be undertaken by the Settling Defendants to implement the ROD, in accordance with the SOW and the final Remedial Design and Remedial Action ("RD/RA") Work Plans and other plans approved by EPA.

"Remedial Action Work Plan" shall mean the document developed pursuant to Paragraph 11 of this Consent Decree and approved by EPA, and any amendments thereto.

"Remedial Design" shall mean those activities to be undertaken by the Settling Defendants to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

"Remedial Design Work Plan" shall mean the document developed pursuant to Paragraph 10 of this Consent Decree and approved by EPA, and any amendments thereto.

"Tar Creek Special Account" shall mean the Tar Creek Special Account created pursuant to Paragraph 57 of the Consent Decree entered on January 12, 2000 in Civil Action 99-1399-WEB.

"Treece Special Account" shall mean the Treece Special Account described in Paragraph 56 of the Consent Decree entered on January 12, 2000 in Civil Action 99-1399-WEB.

"Section" shall mean a portion of this Consent Decree identified by a Roman numeral.

"Settling Defendants" shall mean Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corp.

"Site" for purposes of this Consent Decree shall mean the Treece Subsite of the Cherokee County, Kansas Superfund Site, located in Cherokee County, Kansas, and depicted generally on the map attached as Appendix C1.

"Settling Defendant-Specific Work" for purposes of this Consent Decree shall mean the portion of the Work in specific areas within the Treece Subsite for which each Settling Defendant is designated in Appendix C2 as the party performing such portion of the Work.

"State" shall mean the State of Kansas.

"Statement of Work" or "SOW" shall mean the statement of work for implementation of the Remedial Design and the Remedial Action (which includes Operation and Maintenance) set forth in Appendix B of this Consent Decree and any modifications made in accordance with this Consent Decree.

"Supervising Contractor" shall mean the principal contractor retained by each of the Settling Defendants to supervise and direct the implementation of the Work under this Consent Decree.

"United States" shall mean the United States of America.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. § 9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

"Work" shall mean all activities Settling Defendants are required to perform under this Consent Decree, except those required by Section XXV (Retention of Records). For each individual Settling Defendant, "Work" shall mean such Settling Defendant's respective "Settling Defendant-Specific Work".

V. GENERAL PROVISIONS

5. Objectives of the Parties. The objectives of the Parties in entering into this Consent Decree are to protect public health or welfare or the environment at the Site by the design and implementation of response actions at the Site by the Settling Defendants, to reimburse response costs of the Plaintiff, and to resolve the claims of Plaintiff against Settling Defendants as provided in this Consent Decree.

6. Commitments by Settling Defendants.

a. Settling Defendants shall finance and perform the Work in accordance with this Consent Decree, the ROD, the SOW, and all work plans and other plans, standards, specifications, and schedules set forth herein or developed by Settling Defendants and approved by EPA pursuant to this Consent Decree. Settling Defendants shall also reimburse the United States for Future Response Costs as provided in this Consent Decree.

b. The obligations of each Settling Defendant to finance and perform the Work and to pay amounts owed the United States under this Consent Decree are limited to the Work for which each Settling Defendant is designated in Appendix C2, and to response costs as specified in Section XVI (Payment for Response Costs). In the event of the insolvency or other failure of any one or more Settling Defendants to implement the requirements of this Consent

Decree, the remaining Settling Defendants are not required to complete Work or pay response costs for which it or they are not designated in Appendix C2 or specified as the party to pay response costs. If two or more Settling Defendants are designated to perform the work in the same area or are designated to pay response costs related to that area, then all such Settling Defendants so designated are jointly and severally liable and in the event of the insolvency or other failure of any one or more Settling Defendants to implement the requirements of this Consent Decree, the remaining Settling Defendants are required to complete the designated work and pay the designated response costs. The obligations of this Consent Decree shall apply fully to each Settling Defendant as if each Settling Defendant had entered into a separate consent decree with the United States solely with regard to its respective Work. Whether plural or singular forms are used in this Consent Decree, the form given effect shall be that form necessary to give effect to the division of Work into Settling Defendant-Specific Work and the payment of response costs as specified in Section XVI (Payment for Response Costs).

7. Compliance With Applicable Law. All activities undertaken by Settling Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. Settling Defendants must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the RODs and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be considered to be consistent with the NCP.

8. Permits.

a. As provided in Section 121(e) of CERCLA and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. The Settling Defendants may seek relief under the provisions of Section XVIII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit required for the Work.

c. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

VI. PERFORMANCE OF THE WORK BY SETTLING DEFENDANTS

9. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by Settling Defendants pursuant to Sections VI (Performance of the Work by Settling Defendants), VII (Remedy Review), VIII (Quality Assurance, Sampling and Data Analysis), and XV (Emergency Response) of this Consent Decree shall be under the direction and supervision of a Supervising Contractor, the selection of which shall be subject to disapproval by EPA. Within sixty (60) days after the lodging of this Consent Decree, Settling Defendants shall notify EPA in writing of the name,

title, and qualifications of any contractor proposed to be a Supervising Contractor. With respect to any contractor proposed to be a Supervising Contractor, Settling Defendants shall demonstrate that the proposed contractor has a quality system that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. EPA will issue a notice of disapproval or an authorization to proceed. If at any time thereafter, Settling Defendants propose to change a Supervising Contractor, Settling Defendants shall give such notice to EPA and must obtain an authorization to proceed from EPA before the new Supervising Contractor performs, directs, or supervises any Work under this Consent Decree.

b. If EPA disapproves a proposed Supervising Contractor, EPA will notify Settling Defendants in writing. Settling Defendants shall submit to EPA a list of contractors, including the qualifications of each contractor, that would be acceptable to them within 60 days of receipt of EPA's disapproval of the contractor previously proposed. EPA will provide written notice of the names of any contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. Settling Defendants may select any contractor from that list that is not disapproved and shall notify EPA of the name of the contractor selected within 21 days of EPA's authorization to proceed.

c. If EPA fails to provide written notice of its authorization to proceed or disapproval as provided in this Paragraph and this failure prevents the Settling Defendants from meeting one or more deadlines in a plan approved by the EPA pursuant to this Consent Decree, Settling Defendants may seek relief under the provisions of Section XVIII (Force Majeure) hereof.

10. Remedial Design.

a. Within forty-five (45) days of EPA's approval of the Project Coordinators and Supervising Contractors and after EPA's issuance of an authorization to proceed pursuant to Paragraph 9, Settling Defendants shall submit to EPA a work plan for the design of the Remedial Action at the Site ("Remedial Design Work Plan" or "RD Work Plan"). The RD Work Plan shall provide for design of the remedy set forth in the ROD, in accordance with the SOW and for achievement of the Performance Standards and other requirements set forth in the ROD, this Consent Decree and/or the SOW. Upon its approval by EPA, the Remedial Design Work Plan shall be incorporated into and become enforceable under this Consent Decree. Within thirty (30) days after EPA's issuance of an authorization to proceed, the Settling Defendants shall submit to EPA and the State a Health and Safety Plan for field design activities which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The Remedial Design Work Plan shall include plans and schedules for implementation of all remedial design and pre-design tasks identified in the SOW. The RD Work Plan will include the pre-design and design document sequence; a design analysis report; a

chemical data acquisition plan; a quality assurance project plan; a Site safety plan; and an organizational chart. In addition, the RD Work Plan shall include a schedule for completion of the Remedial Action Work Plan.

c. Upon approval of the Remedial Design Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submittal to EPA and the State of the Health and Safety Plan for all field activities, Settling Defendants shall implement the Remedial Design Work Plan. The Settling Defendants shall submit to EPA and the State all plans, submittals and other deliverables required under the approved Remedial Design Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Defendants shall not commence further Remedial Design activities at the Site prior to approval of the Remedial Design Work Plan.

11. Remedial Action.

a. Within sixty (60) days after the approval of the final design submittal, Settling Defendants shall submit to EPA and the State a work plan for the performance of the Remedial Action at the Site ("Remedial Action Work Plan"). The Remedial Action Work Plan shall provide for construction and implementation of the remedy set forth in the ROD and achievement of the Performance Standards, in accordance with this Consent Decree, the ROD, the SOW, and the design plans and specifications developed in accordance with the Remedial Design Work Plan approved by EPA. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Consent Decree. At the same

time as they submit the Remedial Action Work Plan, Settling Defendants shall submit to EPA and the State a Health and Safety Plan for field activities required by the Remedial Action Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The Remedial Action Work Plan shall include the preparation of a work plan that includes the components of the completed Remedial Design and an O&M plan for post remedy implementation. The Remedial Action Work Plan also shall include the methodology for implementation of the Construction Quality Assurance Plan and a schedule for implementation of all Remedial Action tasks identified in the final design submittal and shall identify the initial formulation of the Settling Defendants' Remedial Action Project Team (including, but not limited to, the Supervising Contractor).

c. Upon approval of the Remedial Action Work Plan by EPA, after a reasonable opportunity for review and comment by the State, Settling Defendants shall implement the activities required under the Remedial Action Work Plan. The Settling Defendants shall submit to EPA and the State all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Defendants shall not commence physical Remedial Action activities at the Site prior to approval of the Remedial Action Work Plan.

12. The Settling Defendants shall continue to implement the Remedial Action and O&M until the Performance Standards are achieved and for so long thereafter as is otherwise required under this Consent Decree.

13. Modification of the SOW or Related Work Plans.

a. If EPA determines that modification to the work specified in the SOW and/or in work plans developed pursuant to the SOW is necessary to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, EPA may require that such modification be incorporated in the SOW and/or such work plans, provided, however, that a modification may only be required pursuant to this Paragraph to the extent that it is consistent with the scope of the remedy selected in the ROD.

b. For the purposes of this Paragraph 13 and Paragraph 50 only, the "scope of the remedy selected in the ROD" is: implementation of the selected remedy and achievement of the Performance Standards applicable to the Site.

c. If Settling Defendants object to any modification determined by EPA to be necessary pursuant to this Paragraph, they may seek dispute resolution pursuant to Section XIX (Dispute Resolution), Paragraph 67 (record review). The SOW and/or related work plans shall be modified in accordance with final resolution of the dispute.

d. Settling Defendants shall implement any work required by any modifications incorporated in the SOW and/or in work plans developed pursuant to the SOW in accordance with this Paragraph.

e. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this Consent Decree.

14. Settling Defendants acknowledge and agree that nothing in this Consent Decree, the SOW, or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by Plaintiff that compliance with the work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

15. a. Settling Defendants shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator of such shipment of Waste Material. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

(1) The Settling Defendants shall include in the written notification the following information, where available: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. The Settling Defendants shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

(2) The identity of the receiving facility and state will be determined by the Settling Defendants following the award of the contract for Remedial Action construction.

The Settling Defendants shall provide the information required by Paragraph 15.a as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

b. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Settling Defendants shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3) and 40 C.F.R. 300.440. Settling Defendants shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulations cited in the preceding sentence.

VII. REMEDY REVIEW

16. Periodic Review. Settling Defendants shall conduct any studies and investigations as requested by EPA, in order to permit EPA to conduct reviews of whether the Remedial Action is protective of human health and the environment at least every five years as required by Section 121(c) of CERCLA and any applicable regulations.

17. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

18. Opportunity To Comment. Settling Defendants and, if required by Sections 113(k)(2) or 117 of CERCLA, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to

Section 121(c) of CERCLA and to submit written comments for the record during the comment period.

19. Settling Defendants' Obligation To Perform Further Response Actions. If EPA selects further response actions for the Site, the Settling Defendants shall undertake such further response actions to the extent that the reopener conditions in Paragraph 83 or Paragraph 84 (United States' reservations of liability based on unknown conditions or new information) are satisfied. Settling Defendants may invoke the procedures set forth in Section XIX (Dispute Resolution) to dispute (1) EPA's determination that the reopener conditions of Paragraph 83 or Paragraph 84 of Section XXI (Covenants Not To Sue by Plaintiff) are satisfied, (2) EPA's determination that the Remedial Action is not protective of human health and the environment, or (3) EPA's selection of the further response actions. Disputes pertaining to whether the Remedial Action is protective or to EPA's selection of further response actions shall be resolved pursuant to Paragraph 67 (record review).

20. Submissions of Plans. If Settling Defendants are required to perform the further response actions pursuant to Paragraph 19, they shall submit a plan for such work to EPA for approval in accordance with the procedures set forth in Section VI (Performance of the Work by Settling Defendants) and shall implement the plan approved by EPA in accordance with the provisions of this Decree.

VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

21. Settling Defendants shall use quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance and monitoring samples in accordance

with “EPA Requirements for Quality Assurance Project Plans (QA/R5)” (EPA/240/B-01/003, March 2001) “Guidance for Quality Assurance Project Plans (QA/G-5)” (EPA/600/R-98/018, February 1998), and subsequent amendments to such guidelines upon notification by EPA to Settling Defendants of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Consent Decree, Settling Defendants shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan (“QAPP”) that is consistent with the SOW, the NCP and any applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Consent Decree. Settling Defendants shall ensure that EPA and State personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Defendants in implementing this Consent Decree. In addition, Settling Defendants shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. Settling Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Consent Decree perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the “Contract Lab Program Statement of Work for Inorganic Analysis” and the “Contract Lab Program Statement of Work for Organic Analysis,” dated February 1988, and any amendments made thereto during the course of the implementation of this Consent Decree; however, upon approval by EPA, after opportunity for

review and comment by the State, the Settling Defendants may use other analytical methods which are as stringent as or more stringent than the CLP- approved methods. Settling Defendants shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program. Settling Defendants shall only use laboratories that have a documented Quality System which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP) as meeting the Quality System requirements. Settling Defendants shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Consent Decree will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

22. Upon request, the Settling Defendants shall allow split or duplicate samples to be taken by EPA and the State or their authorized representatives. Settling Defendants shall notify EPA and the State not less than 15 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA and the State shall have the right to take any additional samples that EPA or the State deem necessary. Upon request, EPA and the State shall allow the Settling Defendants to take split or duplicate samples of any samples they take as part of the Plaintiff's oversight of the Settling Defendants' implementation of the Work.

23. Settling Defendants shall submit one copy to EPA and one copy to the State of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Defendants with respect to the Site and/or the implementation of this Consent Decree unless EPA agrees otherwise.

24. Notwithstanding any provision of this Consent Decree, the United States and the State hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS

25. If the Site, or any other property where access and/or land/water use restrictions relating to Operation and Maintenance (but not to county-wide controls identified in the ROD), are needed to implement this Consent Decree, is owned or controlled by any of the Settling Defendants, such Settling Defendants shall:

a. commencing on the date of lodging of this Consent Decree, provide the United States, the State, and their representatives, including EPA and its contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Consent Decree including, but not limited to, the following activities:

(1) Monitoring the Work;

(2) Verifying any data or information submitted to the United States or the State;

(3) Conducting investigations relating to contamination at or near the Site;

(4) Obtaining samples;

(5) Assessing the need for, planning, or implementing additional response actions at or near the Site;

(6) Assessing implementation of quality assurance and quality control practices as defined in the approved Quality Assurance Project Plans;

(7) Implementing the Work pursuant to the conditions set forth in Paragraph 87 of this Consent Decree;

(8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents, consistent with Section XXIV (Access to Information);

(9) Assessing Settling Defendants' compliance with this Consent Decree; and

(10) Determining whether the Site or other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Decree.

26. If the Site, or any other property where access and/or land/water use restrictions relating to Operation and Maintenance (but not to county-wide controls identified in the ROD), are needed to implement this Consent Decree, is owned or controlled by persons other than any

of the Settling Defendants, Settling Defendants shall use best efforts to secure from such persons:

a. an agreement to provide access thereto for Settling Defendants, as well as for the United States on behalf of EPA, and the State, as well as their representatives (including contractors), for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 25.a of this Consent Decree;

b. an agreement, enforceable by the Settling Defendants and the United States, to refrain from using the Site, or such other property, in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures to be performed pursuant to this Consent Decree.

27. For purposes of Paragraph 26 of this Consent Decree, "best efforts" includes the payment of reasonable sums of money in consideration of access, access easements, land/water use restrictions, restrictive easements, and/or an agreement to release or subordinate a prior lien or encumbrance relating to Operation and Maintenance (but not to county-wide controls identified in the ROD). If any access or land/water use restriction agreements relating to Operation and Maintenance (but not to county-wide controls identified in the ROD), required by Paragraph 26 of this Consent Decree are not obtained by the completion date of the remedial design work plan for access agreements and by the completion of remedial action construction for land use restrictions, Settling Defendants shall promptly notify the United States in writing, and shall include in that notification a summary of the steps that Settling Defendants have taken to attempt to comply with Paragraph 26 of this Consent Decree. The United States may, as it

deems appropriate, assist Settling Defendants in obtaining access or land/water use restrictions relating to Operation and Maintenance (but not to county-wide controls identified in the ROD), either in the form of contractual agreements or in the form of easements running with the land. Settling Defendants shall reimburse the United States in accordance with the procedures in Section XVI (Payments for Response Costs), for all costs incurred, direct or indirect, by the United States in obtaining such access and/or land/water use restrictions relating to Operation and Maintenance (but not to county-wide controls identified in the ROD), including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation.

28. If EPA determines that land/water use restrictions relating to Operation and Maintenance (but not to county-wide controls identified in the ROD), in the form of state or local laws, regulations, ordinances or other governmental controls, are needed to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, Settling Defendants shall cooperate with EPA's and the State's efforts to secure such governmental controls.

29. Notwithstanding any provision of this Consent Decree, the United States and the State retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

30. In addition to any other requirement of this Consent Decree, Settling Defendants shall submit two copies to EPA and one copy to the State of written monthly progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous month; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Defendants or their contractors or agents in the previous month; (c) identify all work plans, plans and other deliverables required by this Consent Decree completed and submitted during the previous month; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next two months and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams, Gantt charts and Pert charts; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; (f) include any modifications to the work plans or other schedules that Settling Defendants have proposed to EPA or that have been approved by EPA; and (g) describe all activities undertaken in support of the Community Relations Plan during the previous month and those to be undertaken in the next two months. Settling Defendants shall submit these written monthly progress reports to EPA and the State by the fifteenth day of every month following the lodging of this Consent Decree until EPA notifies the Settling Defendants pursuant to Paragraph 51.b of Section XIV (Certification of

Completion). If requested by EPA, Settling Defendants shall also provide briefings for EPA to discuss the progress of the Work.

31. The Settling Defendants shall notify EPA of any change in the schedule described in the monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven days prior to the performance of the activity.

32. Upon the occurrence of any event during performance of the Work that Settling Defendants are required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), Settling Defendants shall within 24 hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), or, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Emergency Response Section, Region VII, United States Environmental Protection Agency. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

33. Within 20 days of the onset of such an event, Settling Defendants shall furnish to Plaintiff a written report, signed by the Settling Defendants' Project Coordinator(s), setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 days of the conclusion of such an event, Settling Defendants shall submit a report setting forth all actions taken in response thereto.

34. Settling Defendants shall submit two copies of all plans, reports, and data required by the SOW, the Remedial Design Work Plan, the Remedial Action Work Plan, or any other approved plans to EPA in accordance with the schedules set forth in such plans. Settling Defendants shall simultaneously submit one copy of all such plans, reports and data to the State. Upon request by EPA, Settling Defendants shall submit in electronic form all portions of any report or other deliverable Settling Defendants are required to submit pursuant to the provisions of this Consent Decree.

35. All reports and other documents submitted by Settling Defendants to EPA (other than the monthly progress reports referred to above) which purport to document Settling Defendants' compliance with the terms of this Consent Decree shall be signed by an authorized representative of the Settling Defendants.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

36. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, EPA, after reasonable opportunity for review and comment by the State, shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Defendants modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Settling Defendants at least one notice of deficiency and an opportunity to cure within 20 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and the

deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

37. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph36(a),(b), or (c), Settling Defendants shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 36(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

38. Resubmission of Plans.

a. Upon receipt of a notice of disapproval pursuant to Paragraph 36(d), Settling Defendants shall, within 20 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XX (Stipulated Penalties), shall accrue during the 20-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in 39 and 40.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 36(d), Settling Defendants shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient

portion of a submission shall not relieve Settling Defendants of any liability for stipulated penalties under Section XX (Stipulated Penalties).

39. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Defendants to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item. Settling Defendants shall implement any such plan, report, or item as modified or developed by EPA, subject only to their right to invoke the procedures set forth in Section XIX (Dispute Resolution).

40. If upon resubmission, a plan, report, or item is disapproved or modified by EPA due to a material defect, Settling Defendants shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Settling Defendants invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX (Stipulated Penalties).

41. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon approval or modification by EPA, be enforceable under this Consent Decree. In the event EPA approves or modifies a portion of a plan, report, or other item required

to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT COORDINATORS

42. Within 30 days of lodging this Consent Decree, each Settling Defendant will notify EPA, in writing, of the name, address and telephone number of their designated Project Coordinator(s). The EPA and State Project Coordinators are the following:

David Drake

EPA Project Coordinator

U.S. EPA Region VII

901 N. 5th Street

Kansas City, Kansas 66101

(913) 551-7626

drake.dave@epa.gov

Leo Henning

State Project Coordinator

Kansas Department of Health and Environment

1000 S.W. Jackson, Suite 410

Topeka, Kansas 66612-1367

(785) 296-1914

lhenning@state.ks.us

If a Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least 5 working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Defendants' Project Coordinator(s) shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. The Settling Defendants' Project Coordinator(s) shall not be an attorney for any of the Settling Defendants in this matter. He or she may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of daily operations during remedial activities.

43. Plaintiff may designate other representatives, including, but not limited to, EPA and State employees, and federal and State contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Decree. EPA's Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager (RPM) and an On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator shall have authority, consistent with the National Contingency Plan, to halt any Work required by this Consent Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to the release or threatened release of Waste Material.

44. EPA's Project Coordinator and the Settling Defendants' Project Coordinator(s) will meet, or communicate telephonically, at a minimum, on a monthly basis.

XIII. ASSURANCE OF ABILITY TO COMPLETE WORK

45. (1) In order to ensure the full and final completion of the Work, Settling Defendant(s) shall establish and maintain a Performance Guarantee for the benefit of EPA in the amount of $4,600,000, apportioned to Settling Defendant-Specific Work Areas as follows: Jarrett, Foley and Mullen Parcels described in Appendix C–$1,200,000; Robinson Parcel described in Appendix C-$2,700,000; and Blue Diamond-Blue Mound Parcel described in Appendix C–$700,000 (hereinafter "Estimated Cost of the Work") in one or more of the following forms, which must be satisfactory in form and substance to EPA:

a. A surety bond unconditionally guaranteeing payment and/or performance of the Work that is issued by a surety company among those listed as acceptable sureties on Federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. One or more irrevocable letters of credit, payable to or at the direction of EPA, that is issued by one or more financial institution(s) (i) that has the authority to issue letters of credit and (ii) whose letter-of-credit operations are regulated and examined by a U.S. Federal or State agency;

c. A trust fund established for the benefit of EPA that is administered by a trustee (i) that has the authority to act as a trustee and (ii) whose trust operations are regulated and examined by a U.S. Federal or State agency;

d. A policy of insurance that (i) provides EPA with acceptable rights as a beneficiary thereof; and (ii) is issued by an insurance carrier (a) that has the authority to issue insurance

policies in the applicable jurisdiction(s) and (b) whose insurance operations are regulated and examined by a State agency;

e. A demonstration by one or more Settling Defendants that each such Settling Defendant meets the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work, provided that all other requirements of 40 C.F.R. § 264.143(f) are satisfied; or

f. A written guarantee to fund or perform the Work executed in favor of EPA by one or more of the following: (i) a direct or indirect parent company of a Settling Defendant, or (ii) a company that has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with at least one Settling Defendant; provided, however, that any company providing such a guarantee must demonstrate to the satisfaction of EPA that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work that it proposes to guarantee hereunder.

(2) Settling Defendant(s) have selected, and EPA has approved, as an initial Performance Guarantee a trust fund pursuant to Paragraph 45(1)(c), in the forms attached hereto as Appendices D1-D4. Within ten days after entry of this Consent Decree, Settling Defendant(s) shall execute or otherwise finalize all instruments or other documents required in order to make the selected Performance Guarantee(s) legally binding in a form substantially identical to the documents attached hereto as Appendices D1-D4, and such Performance Guarantee(s) shall thereupon be fully effective. Within thirty days of entry of this Consent Decree, Settling Defendant(s) shall submit all executed and/or otherwise finalized instruments or other

documents required in order to make the selected Performance Guarantee(s) legally binding to the EPA Regional Financial Management Officer in accordance with Section XXVI ("Notices and Submissions") of this Consent Decree and to the United States and EPA as specified in Section XXVI.

46. If at any time during the effective period of this Consent Decree, the Settling Defendant(s) provide a Performance Guarantee for completion of the Work by means of a demonstration or guarantee pursuant to Paragraph 45 (e) or 45(f) above, such Settling Defendant shall also comply with the other relevant requirements of 40 C.F.R. § 264.143(f), 40 C.F.R. § 264.151(f), and 40 C.F.R. § 264.151(h)(1) relating to these methods unless otherwise provided in this Consent Decree, including but not limited to (i) the initial submission of required financial reports and statements from the relevant entity's chief financial officer and independent certified public accountant; (ii) the annual re-submission of such reports and statements within ninety days after the close of each such entity's fiscal year; and (iii) the notification of EPA within ninety days after the close of any fiscal year in which such entity no longer satisfies the financial test requirements set forth at 40 C.F.R. § 264.143(f)(1). For purposes of the Performance Guarantee methods specified in this Section XIII, references in 40 C.F.R. Part 264, Subpart H, to "closure," "post-closure," and "plugging and abandonment" shall be deemed to refer to the Work required under this Consent Decree, and the terms "current closure cost estimate" "current post-closure cost estimate," and "current plugging and abandonment cost estimate" shall be deemed to refer to the Estimated Cost of the Work.

47. In the event that EPA determines at any time, that a Performance Guarantee provided by any Settling Defendant pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, or in the event that any Settling Defendant becomes aware of information indicating that a Performance Guarantee provided pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, Settling Defendant(s), within thirty days of receipt of notice of EPA's determination or, as the case may be, within thirty days of any Settling Defendant becoming aware of such information, shall obtain and present to EPA for approval a proposal for a revised or alternative form of Performance Guarantee listed in Paragraph 45 of this Consent Decree that satisfies all requirements set forth in this Section XIII. In seeking approval for a revised or alternative form of Performance Guarantee, Settling Defendants shall follow the procedures set forth in Paragraph 49(b)(ii) of this Consent Decree. Settling Defendants' inability to post a Performance Guarantee for completion of the Work shall in no way excuse performance of any other requirements of this Consent Decree, including, without limitation, the obligation of Settling Defendant(s) to complete the Work in strict accordance with the terms hereof.

48. The commencement of any Work Takeover pursuant to Paragraph 87 of this Consent Decree shall trigger EPA's right to receive the benefit of any Performance Guarantee(s) provided pursuant to Paragraph 45(a), (b), (c), (d), or (f), and at such time EPA shall have immediate access to resources guaranteed under any such Performance Guarantee(s), whether in

cash or in kind, as needed to continue and complete the Work assumed by EPA under the Work Takeover. If for any reason EPA is unable to promptly secure the resources guaranteed under any such Performance Guarantee(s), whether in cash or in kind, necessary to continue and complete the Work assumed by EPA under the Work Takeover, or in the event that the Performance Guarantee involves a demonstration of satisfaction of the financial test criteria pursuant to Paragraph 45(e), Settling Defendant(s) shall immediately upon written demand from EPA deposit into an account specified by EPA, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed as of such date, as determined by EPA.

49. Modification of Amount and/or Form of Performance Guarantee.

a. Reduction of Amount of Performance Guarantee. If Settling Defendant(s) believe that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 45 above, Settling Defendant(s) may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, petition EPA in writing to request a reduction in the amount of the Performance Guarantee provided pursuant to this Section so that the amount of the Performance Guarantee is equal to the estimated cost of the remaining Work to be performed. Settling Defendant(s) shall submit a written proposal for such reduction to EPA that shall specify, at a minimum, the cost of the remaining Work to be performed and the basis upon which such cost was calculated. In seeking approval for a revised or alternative form of Performance Guarantee, Settling Defendants shall follow the procedures set forth in Paragraph 49(b)(ii) of this Consent Decree. If EPA decides to accept such a

proposal, EPA shall notify the petitioning Settling Defendant(s) of such decision in writing. After receiving EPA's written acceptance, Settling Defendant(s) may reduce the amount of the Performance Guarantee in accordance with and to the extent permitted by such written acceptance. In the event of a dispute, Settling Defendant(s) may reduce the amount of the Performance Guarantee required hereunder only in accordance with a final administrative or judicial decision resolving such dispute. No change to the form or terms of any Performance Guarantee provided under this Section, other than a reduction in amount, is authorized except as provided in Paragraphs 47 or 49(b) of this Consent Decree.

b. Change of Form of Performance Guarantee.

(i) If, after entry of this Consent Decree, Settling Defendant(s) desire to change the form or terms of any Performance Guarantee(s) provided pursuant to this Section, Settling Defendant(s) may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, petition EPA in writing to request a change in the form of the Performance Guarantee provided hereunder. The submission of such proposed revised or alternative form of Performance Guarantee shall be as provided in Paragraph 49(b)(ii) of this Consent Decree. Any decision made by EPA on a petition submitted under this subparagraph (b)(i) shall be made in EPA's sole and unreviewable discretion, and such decision shall not be subject to challenge by Settling Defendant(s) pursuant to the dispute resolution provisions of this Consent Decree or in any other forum.

(ii) Settling Defendant(s) shall submit a written proposal for a revised or alternative form of Performance Guarantee to EPA which shall specify, at a minimum, the

estimated cost of the remaining Work to be performed, the basis upon which such cost was calculated, and the proposed revised form of Performance Guarantee, including all proposed instruments or other documents required in order to make the proposed Performance Guarantee legally binding. The proposed revised or alternative form of Performance Guarantee must satisfy all requirements set forth or incorporated by reference in this Section. Settling Defendant(s) shall submit such proposed revised or alternative form of Performance Guarantee to the EPA Regional Financial Management Officer in accordance with Section XXVI ("Notices and Submissions") of this Consent Decree. EPA shall notify Settling Defendant(s) in writing of its decision to accept or reject a revised or alternative Performance Guarantee submitted pursuant to this subparagraph. Within ten days after receiving a written decision approving the proposed revised or alternative Performance Guarantee, Settling Defendant(s) shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected Performance Guarantee(s) legally binding in a form substantially identical to the documents submitted to EPA as part of the proposal, and such Performance Guarantee(s) shall thereupon be fully effective. Settling Defendant(s) shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected Performance Guarantee(s) legally binding to the EPA Regional Financial Management Officer within thirty days of receiving a written decision approving the proposed revised or alternative Performance Guarantee in accordance with Section XXVI ("Notices and Submissions") of this Consent Decree, and to the United States and EPA and the State as specified in Section XXVI.

c. Release of Performance Guarantee. If Settling Defendant(s) receive written notice from EPA in accordance with Paragraph 51 hereof that the Work has been fully and finally completed in accordance with the terms of this Consent Decree, or if EPA otherwise so notifies Settling Defendant(s) in writing, Settling Defendant(s) may thereafter release, cancel, or discontinue the Performance Guarantee(s) provided pursuant to this Section. Settling Defendant(s) shall not release, cancel, or discontinue any Performance Guarantee provided pursuant to this Section except as provided in this subparagraph. In the event of a dispute, Settling Defendant(s) may release, cancel, or discontinue the Performance Guarantee(s) required hereunder only in accordance with a final administrative or judicial decision resolving such dispute.

XIV. CERTIFICATION OF COMPLETION

50. Completion of the Remedial Action.

a. Within 90 days after Settling Defendants conclude that the Remedial Action has been fully performed and the Performance Standards have been attained, Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Defendants, EPA, and the State. If, after the pre-certification inspection, the Settling Defendants still believe that the Remedial Action has been fully performed and the Performance Standards have been attained, they shall submit a written report requesting certification to EPA for approval, with a copy to the State, pursuant to Section XI (EPA Approval of Plans and Other Submissions) within 30 days of the inspection. In the report, a registered professional engineer and the Settling Defendants' Project Coordinator(s) shall state that the Remedial Action has been

completed in full satisfaction of the requirements of this Consent Decree. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of each Settling Defendant or the Settling Defendants' Project Coordinator(s):

> To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that the Remedial Action or any portion thereof has not been completed in accordance with this Consent Decree or that the Performance Standards have not been achieved, EPA will notify Settling Defendants in writing of the activities that must be undertaken by Settling Defendants pursuant to this Consent Decree to complete the Remedial Action and achieve the Performance Standards, provided, however, that EPA may only require Settling Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 13.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling

Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion and after a reasonable opportunity for review and comment by the State, that the Remedial Action has been performed in accordance with this Consent Decree and that the Performance Standards have been achieved, EPA will so certify in writing to Settling Defendants. This certification shall constitute the Certification of Completion of the Remedial Action for purposes of this Consent Decree, including, but not limited to, Section XXI (Covenants Not to Sue by Plaintiff). Certification of Completion of the Remedial Action shall not affect Settling Defendants' obligations under this Consent Decree.

51. Completion of the Work.

a. Within 90 days after Settling Defendants conclude that all phases of the Work (including O & M), have been fully performed, Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Defendants, EPA and the State. If, after the pre-certification inspection, the Settling Defendants still believe that the Work has been fully performed, Settling Defendants shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of each Settling Defendant or the Settling Defendants' Project Coordinator(s):

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify Settling Defendants in writing of the activities that must be undertaken by Settling Defendants pursuant to this Consent Decree to complete the Work, provided, however, that EPA may only require Settling Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 13.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Defendants and after a reasonable opportunity for review

and comment by the State, that the Work has been performed in accordance with this Consent Decree, EPA will so notify the Settling Defendants in writing.

XV. EMERGENCY RESPONSE

52. a. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Defendants shall, subject to Paragraph 52.b, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator. If neither of these persons is available, the Settling Defendants shall notify the EPA Emergency Response Section, Region VII. Settling Defendants shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW. In the event that Settling Defendants fail to take appropriate response action as required by this Section, and EPA takes such action instead, Settling Defendants shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Payments for Response Costs).

b. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or

threatened release of Waste Material on, at, or from the Site, or b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, subject to Section XXI (Covenants Not to Sue by Plaintiff).

XVI. PAYMENTS FOR RESPONSE COSTS

53. Past Response Costs.

a. In consideration of the terms of this Consent Decree and the Settling Defendants' waiver of any and all claims on the Tar Creek Special Account and the Treece Special Account, Past Response Costs are settled pursuant to this Consent Decree in accordance with the terms hereof.

54. Future Response Costs.

a. Future Response Costs incurred by EPA shall be billed separately to (1) Blue Tee Corp.; (2) Gold Fields Mining, LLC, or to (3) The Doe Run Resources Corporation, based on Settling Defendant-Specific Work to the extent practicable, or if not practicable, then apportioned as follows: Blue Tee Corp. and Gold Fields Mining, LLC–18.2 % of total; and the Doe Run Resources Corporation–81.8 % of total. Notwithstanding the foregoing sentence, Future Response Costs incurred by EPA for the Robinson Parcel described in Appendix C2 shall be collectively billed to all Settling Defendants, who shall be jointly and severally liable for such costs. On a periodic basis the United States will send Settling Defendants a bill that includes a Regionally-prepared cost summary, which includes direct and indirect costs incurred by EPA

and its contractors, and a DOJ-prepared cost summary which reflects costs incurred by DOJ and its contractors, if any.

b. Settling Defendants shall pay to EPA all Future Response Costs not inconsistent with the National Contingency Plan, as provided herein: (1) Blue Tee Corp. and Gold Fields Mining, LLC, jointly and severally, shall pay separately billed Future Response Costs after their separately billed costs exceed $32,032; (2) The Doe Run Resources Corporation shall pay separately billed Future Response Costs after its separately billed costs exceed $143,968; and (3) Settling Defendants shall jointly and severally pay collectively billed Future Response Costs. Settling Defendants shall make all required payments within sixty (60) days of Settling Defendants' receipt of each bill, except as otherwise provided in Paragraph 55 . Settling Defendants shall make all payments required by this Paragraph by a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party making the payment, EPA Site/Spill ID Number 0737, and DOJ Case Number 90-11-2-06017/1. Settling Defendants shall send the check(s) to:

U.S. Environmental Protection Agency

Superfund Payments

Cincinnati Finance Center

P.O. Box 979076

St. Louis, MO 63197-9000

c. At the time of payment, Settling Defendants shall send notice that payment has been made to the United States, to EPA and to the Regional Financial Management Officer, in accordance with Section XXVI (Notices and Submissions).

d. The total amount to be paid by Setting Defendants pursuant to Subparagraph 54.b., shall be deposited in the Cherokee County Special Account, within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Cherokee County Superfund Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

55. Settling Defendants may contest any billing of Future Response Costs, under Paragraph 54 if they determine that the United States has made an accounting error or if they allege that a cost item that is included represents costs that are inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the United States pursuant to Section XXVI (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs, and the basis for objection. In the event of an objection, the Settling Defendants shall within the 60 day period pay all uncontested Future Response Costs to the United States in the manner described in Paragraph 54. Simultaneously, the Settling Defendants shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of Kansas for Site costs and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs to be paid. The Settling Defendants shall send to the United States, as provided in Section XXVI (Notices and Submissions), a copy of the transmittal letter and check paying the uncontested

Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, the Settling Defendants shall initiate the Dispute Resolution procedures in Section XIX (Dispute Resolution). If the United States prevails in the dispute, within 5 days of the resolution of the dispute, the Settling Defendants shall pay the sums due (with accrued interest) to the United States in the manner described in Paragraph 54. If the Settling Defendants prevail concerning any aspect of the contested costs, the Settling Defendants shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States in the manner described in Paragraph 54; Settling Defendants shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Defendants' obligation to reimburse the United States for its Future Response Costs.

56. In the event that the payments required by Paragraph 54 are not made within sixty (60) days of the Settling Defendants' receipt of the bill, Settling Defendants shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill. The Interest shall accrue through the date of the Settling Defendants' payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiff by virtue of Settling Defendants' failure to make

timely payments under this Section including, but not limited to, payment of stipulated penalties pursuant to Paragraph 71. The Settling Defendants shall make all payments required by this Paragraph in the manner described in Paragraph 54.

XVII. INDEMNIFICATION AND INSURANCE

57. Settling Defendants' Indemnification of the United States.

a. The United States does not assume any liability by entering into this agreement or by virtue of any designation of Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Settling Defendants shall indemnify, 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 arising from, or on account of, negligent or other wrongful acts or omissions of Settling Defendants, 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 Consent Decree, including, but not limited to, any claims arising from any designation of Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Defendants agree to pay the United States all costs it incurs including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Settling Defendants, 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 Consent Decree. The United States shall not be held out as a party to any contract entered

into by or on behalf of Settling Defendants in carrying out activities pursuant to this Consent Decree. Neither the Settling Defendants nor any such contractor shall be considered an agent of the United States.

b. The United States shall give Settling Defendants notice of any claim for which the United States plans to seek indemnification pursuant to Paragraph 57, and shall consult with Settling Defendants prior to settling such claim.

58. Settling Defendants waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Defendants shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

59. No later than 15 days before commencing any on-site Work, Settling Defendants shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Action pursuant to Subparagraph 50.b of Section XIV (Certification of Completion) comprehensive general liability insurance with limits of $3.0 million dollars, combined single limit, and automobile liability insurance with limits of $1.0 million dollars,

combined single limit, naming the United States as an additional insured. In addition, for the duration of this Consent Decree, Settling Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendants in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, Settling Defendants shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Defendants demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendants need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XVIII. FORCE MAJEURE

60. "Force Majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Defendants, of any entity controlled by Settling Defendants, or of Settling Defendants' contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendants' best efforts to fulfill the obligation. The requirement that the Settling Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential Force Majeure event and best efforts to address the effects of any potential Force Majeure event (1) as

it is occurring and (2) following the potential Force Majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards.

61. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a Force Majeure event, the Settling Defendants shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Director of the Superfund Division, EPA Region VII, within 3 days of when Settling Defendants first knew that the event might cause a delay. Within 7 days thereafter, Settling Defendants shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Defendants' rationale for attributing such delay to a Force Majeure event if they intend to assert such a claim; and a statement as to whether, in the opinion of the Settling Defendants, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a Force Majeure. Failure to comply with the above requirements shall preclude Settling Defendants from asserting any claim of Force Majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Settling Defendants shall be deemed to know of any circumstance of which Settling Defendants,

any entity controlled by Settling Defendants, or Settling Defendants' contractors knew or should have known.

62. If EPA agrees that the delay or anticipated delay is attributable to a Force Majeure event, the time for performance of the obligations under this Consent Decree that are affected by the Force Majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the Force Majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a Force Majeure event, EPA will notify the Settling Defendants in writing of its decision. If EPA agrees that the delay is attributable to a Force Majeure event, EPA will notify the Settling Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the Force Majeure event.

63. If the Settling Defendants elect to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), they shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Settling Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a Force Majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendants complied with the requirements of Paragraphs 60 and 61, above. If Settling Defendants carry this burden, the delay at issue shall be

deemed not to be a violation by Settling Defendants of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

64. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of the Settling Defendants that have not been disputed in accordance with this Section.

65. Any dispute which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

66. Statements of Position.

a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within 30 days after the conclusion of the informal negotiation period, Settling Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Defendants. The Statement of Position

shall specify the Settling Defendants' position as to whether formal dispute resolution should proceed under Paragraph 67 or Paragraph 68.

b. Within 30 days after receipt of Settling Defendants' Statement of Position, EPA will serve on Settling Defendants its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 67 or 68. Within 20 days after receipt of EPA's Statement of Position, Settling Defendants may submit a Reply.

c. If there is disagreement between EPA and the Settling Defendants as to whether dispute resolution should proceed under Paragraph 67 or 68, the parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if the Settling Defendants ultimately appeal to the Court to resolve the dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 67 and 68.

67. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this

Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by Settling Defendants regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Director of the Superfund Division, EPA Region VII, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 67.a. This decision shall be binding upon the Settling Defendants, subject only to the right to seek judicial review pursuant to Paragraph 67.c and d.

c. Any administrative decision made by EPA pursuant to Paragraph 67.b shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the Settling Defendants with the Court and served on all Parties within 20 days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to Settling Defendants' motion.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendants shall have the burden of demonstrating that the decision of the Superfund Division Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 67.a.

68. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Defendants' Statement of Position submitted pursuant to Paragraph 66, the Director of the Superfund Division, EPA Region VII, will issue a final decision resolving the dispute. The Superfund Division Director's decision shall be binding on the Settling Defendants unless, within 20 days of receipt of the decision, the Settling Defendants file with the Court and serve on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Defendants' motion.

b. Notwithstanding Paragraph N of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

69. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Defendants under this Consent Decree, not directly in dispute, unless EPA or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 78. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with

any applicable provision of this Consent Decree. In the event that the Settling Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XX (Stipulated Penalties).

XX. STIPULATED PENALTIES

70. Settling Defendants shall be liable for stipulated penalties in the amounts set forth in Paragraphs 71 and 72 to the United States for failure to comply with the requirements of this Consent Decree, unless excused under Section XVIII (Force Majeure). "Compliance" by each Settling Defendant shall include completion of the activities under this Consent Decree or any work plan or other plan approved under this Consent Decree identified below in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree. To the extent Settling Defendants act jointly and severally with regard to the Work, only one stipulated penalty shall be applied for the violation or failure to comply for which the stipulated penalty is sought.

71. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Subparagraph 71.b:

Penalty Per Violation Per Day	Period of Noncompliance
$ 500	1st through 14th day
$ 1,000	15th through 30th day
$ 2,000	31st day and beyond

b. Compliance Milestones.

(1) Payment of Future Response Costs as directed in this Consent Decree.

(2) Submission of the Remedial Design Work Plan in accordance with the schedule under this Consent Decree.

(3) Submission of the 100% Remedial Design Submittal package in accordance with the schedule under this Consent Decree.

(4) Submission of the Remedial Action Work Plan in accordance with the schedule under this Consent Decree.

(5) Beginning implementation of the Remedial Action in accordance with the schedule under this Consent Decree.

(6) Completing implementation of the Remedial Action in accordance with the schedule developed under this Consent Decree.

72. Stipulated Penalty Amounts - Reports.

a. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports pursuant to Section X. (Reporting Requirements):

Penalty Per Violation Per Day	Period of Noncompliance
$ 500	1st through 14th day
$ 1,000	15th through 30th day
$ 1,500	31st day and beyond

73. In the event that EPA assumes performance of a portion or all of the Settling Defendant-Specific Work pursuant to Paragraph 87 of Section XXI (Covenants Not to Sue by Plaintiff), each Settling Defendant whose Settling Defendant-Specific Work has been taken over shall be liable for a stipulated penalty in the amount of $200,000.

74. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Defendants of any deficiency; (2) with respect to a decision by the Director of the Superfund Division, EPA Region VII, under Paragraph 67.b or 68.a of Section XIX (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that Settling Defendants' reply to EPA's Statement of Position is received until the date that the Director issues a final decision regarding such dispute; or (3) with respect to judicial review by this Court of any dispute under Section XIX (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

75. Following EPA's determination that Settling Defendants have failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendants written

notification of the same and describe the noncompliance. EPA may send the Settling Defendants a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified the Settling Defendants of a violation.

76. All penalties accruing under this Section shall be due and payable to the United States within sixty (60) days of the Settling Defendants' receipt from EPA of a demand for payment of the penalties, unless Settling Defendants invoke the Dispute Resolution procedures under Section XIX (Dispute Resolution). All payments to the United States under this Section shall be paid by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund" and shall be mailed to:

U.S. Environmental Protection Agency

Superfund Payments

Cincinnati Finance Center

P.O. Box 979076

St. Louis, MO 63197-9000

and shall indicate that the payment is for stipulated penalties, and shall reference the EPA Site/Spill ID Number 0737, and DOJ Case Number 90-11-2-06017/1, and the name and address of the party making payment. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to the United States as provided in Section XXVI (Notices and Submissions).

77. The payment of penalties shall not alter in any way Settling Defendants' obligation to complete the performance of the Work required under this Consent Decree.

78. Penalties shall continue to accrue as provided in Paragraph 74 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA within 15 days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Defendants shall pay all accrued penalties determined by the Court to be owed to EPA within 60 days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the District Court's decision is appealed by any Party, Settling Defendants shall pay all accrued penalties determined by the District Court to be owing to the United States into an interest-bearing escrow account within 60 days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every 60 days. Within 15 days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to Settling Defendants to the extent that they prevail.

79. If Settling Defendants fail to pay stipulated penalties when due, the United States may institute proceedings to collect the penalties, as well as interest. Settling Defendants

shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 76.

80. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of Settling Defendants' violation of this Consent Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of the Consent Decree.

81. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

XXI. COVENANTS NOT TO SUE BY PLAINTIFF

82. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants under the terms of the Consent Decree, and except as specifically provided in Paragraphs 83, 84, and 86 of this Section, the United States covenants not to sue or to take administrative action against Settling Defendants pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA relating to the specific areas within the Site for which each Settling Defendant is designated in Appendix C2 as the party performing its respective Settling Defendant-Specific Work. Except with respect to future liability, these covenants not to sue shall take effect upon the Effective Date**.** With respect to future liability,

these covenants not to sue shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 50.b of Section XIV (Certification of Completion). These covenants not to sue are conditioned upon the satisfactory performance by Settling Defendants of their obligations under this Consent Decree. These covenants not to sue extend only to the Settling Defendants and do not extend to any other person.

83. United States' Pre-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Defendants

a. to perform further response actions relating to the Site, or

b. to reimburse the United States for additional costs of response if, prior to Certification of Completion of the Remedial Action:

(1) conditions at the Site, previously unknown to EPA, are discovered, or

(2) information, previously unknown to EPA, is received, in whole or in part,

and EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Remedial Action is not protective of human health or the environment.

84. United States' Post-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without

prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Defendants

a. to perform further response actions relating to the Site, or

b. to reimburse the United States for additional costs of response if, subsequent to Certification of Completion of the Remedial Action:

(1) conditions at the Site, previously unknown to EPA, are discovered, or

(2) information, previously unknown to EPA, is received, in whole or in part,

and EPA determines that these previously unknown conditions or this information together with other relevant information indicate that the Remedial Action is not protective of human health or the environment.

85. For purposes of Paragraph 83, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date the 2006 ROD was signed and set forth in the ROD and the administrative record supporting the ROD. For purposes of Paragraph 84, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action and set forth in the ROD, the administrative record supporting the ROD, the post-ROD administrative record, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to Certification of Completion of the Remedial Action.

86. General reservations of rights. The United States reserves, and this Consent Decree is without prejudice to, all rights against Settling Defendants with respect to all matters not expressly included within Plaintiff's covenant not to sue. Notwithstanding any other provision of this Consent Decree, the United States reserves all rights against Settling Defendants with respect to:

a. claims based on a failure by Settling Defendants to meet a requirement of this Consent Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;

c. liability based upon the Settling Defendants' ownership or operation of the Site, or upon the Settling Defendants' transportation, treatment, storage, or disposal, or the arrangement for the transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA, after signature of this Consent Decree by the Settling Defendants;

d. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

e. criminal liability;

f. liability for violations of federal or state law which occur during or after implementation of the Remedial Action;

g. liability, prior to Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance

Standards, but that cannot be required pursuant to Paragraph 13 (Modification of the SOW or Related Work Plans); and

h. liability for sediment cleanup at the Treece Subsite that pursuant to the ROD is to be addressed after all mine waste cleanups have been conducted to control source contamination to the sediment.

87. Work Takeover.

(a) In the event EPA determines that Settling Defendants have (i) ceased implementation of any portion of the Work, or (ii) are seriously or repeatedly deficient or late in their performance of the Work, or (iii) are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may issue a written notice ("Work Takeover Notice") to the Settling Defendants. Any Work Takeover Notice issued by EPA will specify the grounds upon which such notice was issued and will provide Settling Defendants a period of 10 days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

(b) If, after expiration of the 10-day notice period specified in Paragraph 87(a), Settling Defendants have not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portions of the Work as EPA deems necessary ("Work Takeover"). EPA shall notify Settling Defendants in writing (which writing may be electronic) if EPA determines that implementation of a Work Takeover is warranted under this Paragraph 87(b).

(c) Settling Defendants may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 67, to dispute EPA's implementation of a Work Takeover under Paragraph 87(b). However, notwithstanding Settling Defendants' invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under Paragraph 87(b) until the earlier of (i) the date that Settling Defendants remedy, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice or (ii) the date that a final decision is rendered in accordance with Section XIX (Dispute Resolution), Paragraph 67, requiring EPA to terminate such Work Takeover.

(d) After commencement and for the duration of any Work Takeover, EPA shall have immediate access to and benefit of any performance guarantee(s) provided pursuant to Section XIII of this Consent Decree, in accordance with the provisions of Paragraph 48 of that Section. If and to the extent that EPA is unable to secure the resources guaranteed under any such performance guarantee(s) and the Settling Defendant(s) fail to remit a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed, all in accordance with the provisions of Paragraph 48, any unreimbursed costs incurred by EPA in performing Work under the Work Takeover shall be considered Future Response Costs that Settling Defendants shall pay pursuant to Section XVI (Payment for Response Costs).

88. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all authority and reserve all rights to take any and all response actions authorized by law.

XXII. COVENANTS BY SETTLING DEFENDANTS

89. Covenant Not to Sue. Subject to the reservations in Paragraph 90, Settling Defendants hereby covenant not to sue and agree not to assert any claims or causes of action against the United States with respect to the Site, Past and Future Response Costs as defined herein, or this Consent Decree, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law;

b. any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Site, or

c. any claims arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Kansas Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law.

d. any direct or indirect claim for disbursement from Special Accounts related to the Cherokee County Superfund Site, including but not limited to the Cherokee County Superfund Site Special Account, the Cherokee County OU-3 Special Account, the Institutional Controls Special Account, the Tar Creek Special Account, and the Treece Special Account.

Except as provided in Paragraph 92 (Waiver of Claims Against De Micromis Parties), and Paragraph 97 (waiver of Claim-Splitting Defenses), these covenants not to sue shall not apply in the event that the United States brings a cause of action or issues an order pursuant to

the reservations set forth in Paragraphs 83, 84, 86(b) - (d) or 86(g)-(h), but only to the extent that Settling Defendants' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

90. The Settling Defendants reserve, and this Consent Decree is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; nor shall any such claim include a claim based on EPA's selection of response actions, or the oversight or approval of the Settling Defendants' plans or activities. The foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA.

91. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

92. Settling Defendants agree not to assert any claims and to waive all claims or causes of action that they may have for all matters relating to the Site, including for contribution,

against any person where the person's liability to Settling Defendants with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if:

a. the materials contributed by such person to the Site containing hazardous substances did not exceed the greater of (i) 0.002% of the total volume of waste at the Site, or (ii) 110 gallons of liquid materials or 200 pounds of solid materials.

b. This waiver shall not apply to any claim or cause of action against any person meeting the above criteria if EPA has determined that the materials contributed to the Site by such person contributed or could contribute significantly to the costs of response at the Site. This waiver also shall not apply with respect to any defense, claim, or cause of action that a Settling Defendant may have against any person if such person asserts a claim or cause of action relating to the Site against such Settling Defendant.

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

93. Except as provided in Paragraph 92 (Waiver of Claims Against De Micromis Parties), nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this Consent Decree may have under applicable law. Except as provided in Paragraph 92 (Waiver of Claims Against De Micromis Parties), each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes

of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

94. The Parties agree, and by entering this Consent Decree this Court finds, that the Settling Defendants are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2) for matters addressed in this Consent Decree. "Matters addressed" means Past Response Costs, Future Response Costs, and performance of response actions pursuant to this Consent Decree and described in the ROD for the Treece Subsite, OU4, of the Cherokee County Superfund Site, Cherokee County, Kansas. "Matters Addressed" does not mean sediment cleanup as described in Paragraph 86.h.

95. The Settling Defendants agree that with respect to any suit or claim for contribution brought by them for matters related to this Consent Decree they will notify the United States in writing no later than 60 days prior to the initiation of such suit or claim.

96. The Settling Defendants also agree that with respect to any suit or claim for contribution brought against them for matters related to this Consent Decree they will notify in writing the United States within 10 days of service of the complaint on them. In addition, Settling Defendants shall notify the United States within 10 days of service or receipt of any Motion for Summary Judgment and within 10 days of receipt of any order from a court setting a case for trial.

97. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other appropriate relief relating to the

Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXI (Covenants Not to Sue by Plaintiff).

XXIV. ACCESS TO INFORMATION

98. Settling Defendants shall provide to EPA, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Consent Decree, 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. Settling Defendants 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.

99. Business Confidential and Privileged Documents.

a. Settling Defendants may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiff under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of

confidentiality accompanies documents or information when they are submitted to EPA, or if EPA has notified Settling Defendants that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Settling Defendants.

b. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege in lieu of providing documents, they shall provide the Plaintiff with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information: and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

100. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XXV. RETENTION OF RECORDS

101. Until 10 years after the Settling Defendants' receipt of EPA's notification pursuant to Paragraph 51.b of Section XIV (Certification of Completion of the Work), each Settling Defendant shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that Settling Defendants who are potentially liable as owners or operators of the Site must retain, in addition, all documents and records that relate to the liability of any other person under CERCLA with respect to the Site. Each Settling Defendant must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the final version, or last draft if no final version is prepared, of any documents or records (including documents or records in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each Settling Defendant (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned documents required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

102. At the conclusion of this document retention period, Settling Defendants 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, Settling Defendants shall deliver any such records or documents to EPA. The Settling Defendants may assert that certain documents,

records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege, they shall provide the Plaintiffs with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

103. Each Settling Defendant hereby certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. 6927.

XXVI. NOTICES AND SUBMISSIONS

104. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their

successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, and the Settling Defendants, respectively.

As to the United States:

Chief, or Deputy Chief,
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice, P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-11-2-06017-1

As to EPA:

David Drake
EPA Project Coordinator
United States Environmental Protection Agency
Region VII

As to the Regional Financial Management Officer:

Betty Saladin
Financial Management Officer
United States Environmental Protection Agency
Region VII

As to the Settling Defendants:

Blue Tee Corp and

Gold Fields Mining, LLC:

Terrance Gileo Faye

Babst Calland Clements and Zomir

1 North Maple Avenue

Greensburg, Pennsylvania 15601

The Doe Run Resources Corp.:

Louis J. Marucheau, Vice President, Law

The Doe Run Resources Corporation

1801 Park 270 Drive, Suite 300

St. Louis, Missouri 63146

XXVII. EFFECTIVE DATE

105. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court, except as otherwise provided herein.

XXVIII. RETENTION OF JURISDICTION

106. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Settling Defendants for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce

compliance with its terms, or to resolve disputes in accordance with Section XIX (Dispute Resolution) hereof.

XXIX. APPENDICES

107. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is the 2006 ROD for Cherokee County OU-3/OU-4.

"Appendix B" is the Remedial Design/Remedial Action SOW for the Site.

"Appendix C1" is the description and/or map of the Site Work Areas.

"Appendix C2" describes Settling Defendant-Specific Areas of Work.

"Appendices D1-D4" are the Performance Guarantee trusts pursuant to Paragraph 45(2).

XXX. COMMUNITY RELATIONS

108. Settling Defendants shall propose to EPA their participation in the community relations plan to be developed by EPA. EPA will determine the appropriate role for the Settling Defendants under the Plan. Settling Defendants shall also cooperate with EPA and the State in providing information regarding the Work to the public. As requested by EPA, Settling Defendants shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

XXXI. MODIFICATION

109. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of EPA and the Settling Defendants. All such modifications shall be made in writing.

110. Except as provided in Paragraph 13 (Modification of the SOW or Related Work Plans), no material modifications shall be made to the SOW without written notification to and written approval of the United States, Settling Defendants, and the Court, if such modifications fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R. 300.435(c)(2)(B)(ii). Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the SOW that do not materially alter that document, or material modifications to the SOW that do not fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R.300.435(c)(2)(B)(ii), may be made by written agreement between EPA, after providing the State with a reasonable opportunity to review and comment on the proposed modification, and the Settling Defendants.

111. Nothing in this Consent Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

112. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to

withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Defendants consent to the entry of this Consent Decree without further notice.

113. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation between or among the Parties.

XXXIII. SIGNATORIES/SERVICE

114. Each undersigned representative of a Settling Defendant to this Consent Decree and the Chief or Deputy Chief of the Environmental Enforcement Section, Environment and Natural Resources Division, U.S. Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such Party to this document.

115. Each Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Defendants in writing that it no longer supports entry of the Consent Decree.

116. Each Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree. Settling Defendants hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any

applicable local rules of this Court, including, but not limited to, service of a summons. The parties agree that Settling Defendants need not file an answer to the complaint in this action unless or until the court expressly declines to enter this Consent Decree.

XXXIV. FINAL JUDGMENT

117. This Consent Decree and its appendices constitute the final, complete, and exclusive agreement and understanding among the parties with respect to the settlement embodied in the Consent Decree. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Consent Decree.

118. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States and the Settling Defendants. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS __ DAY OF _____, 20__.

_____

United States District Judge

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corporation, relating to the Treece Subsite of the Cherokee County, Kansas Superfund Site.

FOR THE UNITED STATES OF AMERICA

10/16/08

Date

Bruce S. Gelber, Chief

Environmental Enforcement Section

Environment and Natural Resources Division

U.S. Department of Justice

Washington, D.C. 20530

10/8/08

Date

Anna C. Thode, Senior Attorney

Environmental Enforcement Section

Environment and Natural Resources Division

U.S. Department of Justice

P.O. Box 7611

Washington, D.C. 20044-7611

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corporation, relating to the Treece Subsite of the Cherokee County, Kansas Superfund Site.

10/17/2008

Date

---------- ----------

EMILY METZGER
Assistant United States Attorney

District of Kansas

1200 Epic Center

301 N. Main Street

Wichita, KS 67202-4812

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corporation, relating to the Treece Subsite of the Cherokee County, Kansas Superfund Site.

FOR THE UNITED STATES OF AMERICA

ENVIRONMENTAL PROTECTION AGENCY

5/29/08

Date

Cecilia Tapia

Superfund Division Director, Region VII

U.S. Environmental Protection Agency

901 N. 5th Street

Kansas City, KS 66101

5/29/08

Date

Robert W. Richards

Assistant Regional Counsel, Region VII

U.S. Environmental Protection Agency

901 N. 5th Street

Kansas City, KS 66101

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corporation, relating to the Treece Subsite of the Cherokee County, Kansas Superfund Site.

For Blue Tee Corp.:

9/26/08
Date

Signature:

Name (print): TERRANCE GILED FAYE

Title: SPECIAL COUNSEL

Address: 1 N. MAPLE AVE.
GREENSBURG, PA
15601

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): TERRANCE GILED FAYE

Title: SPECIAL COUNSEL

Address: 1 N. MAPLE AVE.
GREENSBURG, PA
15601

Ph. Number: 724-837-6221

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corporation, relating to the Treece Subsite of the Cherokee County, Kansas Superfund Site.

For Gold Fields Mining, LLC:

9/26/08

Date

Signature: _____

Name (print): TERRANCE GILED FAYE

Title: AGENT

Address: 1 N. MAPLE AVE.
GREENSBURG, PA
15601

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): TERRANCE GILED FAYE

Title: AGENT

Address: 1 N. MAPLE AVE
GREENSBURG, PA
15601

Ph. Number: 724-837-6221

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of Blue Tee Corp., Gold Fields Mining, LLC, and The Doe Run Resources Corporation, relating to the Treece Subsite of the Cherokee County, Kansas Superfund Site.

For The Doe Run Resources Corporation.:

26 SEP 08

Date

Signature: _____

Name (print): LOUIS J. MARUCHEAU

Title: VICE PRESIDENT LAW

Address: THE DOE RUN RESOURCES CORP.
1801 PARK 270 DR., SUITE 300
ST. LOUIS MO 63146

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): CT Corporation System

Title: Registered Agent

Address: 120 S. Central Ave.
Clayton, MO 63105

Ph. Number: 314 863-5545

RECORD OF DECISION AMENDMENT

CHEROKEE COUNTY SUPERFUND SITE
BAXTER SPRINGS AND TREECE SUBSITES
OPERABLE UNITS #03 AND #04

CHEROKEE COUNTY, KANSAS

Prepared by:

U. S. Environmental Protection Agency, Region 7
901 North 5th Street
Kansas City, Kansas 66101

September 2006

RECORD OF DECISION AMENDMENT

DECLARATION

SITE NAME AND LOCATION

Baxter Springs and Treece Subsites, Operable Units #03 and 04 (OU-3 and OU-4)
Cherokee County Superfund Site
Cherokee County, Kansas

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for mine waste at OU-3 and OU-4 of the Cherokee County Superfund Site. This decision was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Contingency Plan (NCP). This decision is based on the Administrative Record for the site. The Administrative Record file is located at the following information repositories:

Johnston Public Library	U.S. Environmental Protection Agency
210 West 10th Street	901 North 5th Street
Baxter Springs, Kansas	Kansas City, Kansas

The state of Kansas concurs with this selected remedy. Additionally, the U.S. Fish and Wildlife Service concurs with the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in this Record of Decision (ROD) Amendment, present a current threat to public health, welfare, or the environment. The site contains heavy metals in various environmental media resulting from historic lead-zinc mining and processing.

DESCRIPTION OF THE SELECTED REMEDY

The U.S. Environmental Protection Agency (EPA) believes the selected remedy (Modified Alternative 8A with an estimated cost of $66 million) appropriately addresses the principal current and potential risks to human health and the environment. The remedy addresses ecological and human health risks by the remediation of surficial mine waste with elevated levels of heavy metals. The major components of the selected remedy for the two subsites (Baxter Springs and Treece) include the following actions.

- Excavate, consolidate, and/or cap all surficial mine waste followed by disposal and capping.

- Utilize subaqueous mine waste disposal to the maximum extent practicable.
- Encourage source reduction via responsible chat sales before and during remedy implementation.
- Adopt Institutional Controls for future development specified in an earlier ROD.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state laws that are legally applicable or relevant and appropriate requirements for the remedial action (unless previously waived in the ROD), and is cost effective. The remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable but may not satisfy the statutory preference for treatment as a principal element because of the large volume and potentially expensive methods to stabilize or treat the mine waste and the effectiveness of nontreatment alternatives. Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

9-29-06

Cecilia Tapia, Director
Superfund Division
U.S. EPA, Region 7

Date

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FIGURES

TABLES

APPENDICES

A. INTRODUCTION

This Record of Decision (ROD) Amendment concerns upcoming remedial actions at the Baxter Springs and Treece subsites of the Cherokee County Superfund Site, Cherokee County, Kansas (Site). It provides background information, summarizes recent information driving the selected alternative, identifies the selected alternative for cleanup and its rationale, and summarizes public review and comment on the selected alternative.

This ROD Amendment is a document that the U.S. Environmental Protection Agency (EPA), as lead agency for the Site, is required to issue to fulfill the statutory and regulatory public participation requirements found, respectively, in section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, and in section 300.430(f)(4) of the National Contingency Plan (NCP).

The EPA is the lead agency for the development of this ROD Amendment and the selected alternative. The EPA has coordinated development of this ROD Amendment with the Kansas Department of Health and Environment (KDHE), the support agency. This ROD Amendment includes formal input from the support agency on the selected alternative. The EPA has also consulted with the U.S. Fish and Wildlife Service (USFWS) in the preparation of this document. With the exception of the shallow aquifer groundwater chemical-specific applicable or relevant and appropriate requirement (ARAR) (previously waived in the 1997 ROD), the selected alternative is expected to meet ARARs and be protective of human and ecological receptors. This ROD Amendment retracts the technical impracticability (TI) waiver for surface water chemical-specific ARARs, which was part of the 1997 ROD, for several reasons. First, EPA (Region 6) and the state of Oklahoma are involved with efforts to complete a Remedial Investigation/Feasibility Study (RI/FS), Baseline Human Health Risk Assessment (BHHRA), and Ecological Risk Assessment (ERA) for the mine waste operable unit (OU) at the adjacent Tar Creek Superfund Site. It is expected that a ROD for addressing this mine waste will be issued by Region 6 in the future. Therefore, it seems appropriate that Region 7 also issue a decision document (i.e., this ROD Amendment) about its remaining upstream mine waste. Secondly, in 1997, the state of Kansas supported the TI waiver based on the lack of downstream mine waste cleanup actions at the Tar Creek Superfund Site. Recently, the state of Kansas has changed this view on Baxter Springs and Treece subsites' mine waste cleanup, mostly due to the recent Region 6 and state of Oklahoma investigation actions. Finally, additional investigations by the United States Geologic Survey (USGS), the publication of the total maximum daily loads (TMDL) by the state of Kansas, the depth to the shallow groundwater aquifer, and the overlying shale/nonyielding limestone (all summarized later in the report) all indicate that significant surface water metal contamination comes from mine waste and not shallow groundwater. Therefore, Region 7 believes it is now technically practicable under a ROD Amendment to meet the surface water chemical-specific ARARs. No other waivers of ARARs for the Site are proposed.

B. COMMUNITY PARTICIPATION

The public was encouraged to participate in the Proposed Plan and ROD Amendment process at OU-3 and OU-4. The Proposed Plan highlighted key information from the RI and FS Reports, FS Addendum Report, ROD dated August 1997, final Remedial Action (RA) report for the Baxter Springs subsite, final residential RA report for the Treece subsite, Five-Year Review Reports, and Administrative Record (AR). Additionally, the public historically has been made aware of the environmental issues in the county through the many public meetings, public availability sessions, newspaper articles, television coverage, radio broadcasts, and press releases that have occurred at the Site for the many environmental cleanups conducted to date. In order to provide the community with an opportunity to submit written or oral comments on the OU-3 and OU-4 Proposed Plan, the EPA established a 30-day public comment period from July 24 to August 22, 2006. A public meeting was held on August 10, 2006, at 7:00 p.m. at the Baxter Springs Community Center, Baxter Springs, Kansas, to present the Proposed Plan, accept written and oral comments, and answer any questions concerning the proposed cleanup remedy. Over 60 people attended the public meeting and the event was covered by a local newspaper and television affiliates. A summary of the verbal questions received at the public meeting, inclusive of responses, is provided in the attached Responsiveness Summary. The Responsiveness Summary also contains a summary of written correspondence received during the public comment period as well as written responses to that input.

The Proposed Plan and supporting AR file were made available for public review during normal business hours at the Johnston Public Library in Baxter Springs, Kansas, and at the Region 7 office in Kansas City, Kansas. Additional AR files supporting the EPA's historical cleanups at the Badger, Waco, Lawton, and Crestline subsites; and Galena subsite are also available at the Region 7 office and at the Columbus Public Library in Columbus, Kansas, and the Galena Public Library in Galena, Kansas, respectively. These additional ARs are incorporated into the OU-3 and OU-4 AR by reference. Moreover, the OU-3 and OU-4 AR has been updated with additional information to support this ROD Amendment.

C. SITE BACKGROUND

The Site spans 115 square miles and represents the Kansas portion of the former Tri-State Mining District (TSMD). The Site is arranged into seven OUs for administrative efficiency in conducting environmental cleanups: OU-1, Galena Alternate Water Supply; OU-2, Spring River Basin; OU-3, Baxter Springs subsite; OU-4, Treece subsite; OU-5, Galena Groundwater/Surface Water; OU-6, Badger, Lawton, Waco, and Crestline subsites; and OU-7, Galena Residential Soils. The Site is depicted on Figure 1.

This ROD Amendment is concerned solely with OU-3 and OU-4, consisting of the Baxter Springs and Treece subsites which are located in the southern portion of the Site and are shown on Figures 2, 3, and 4. Contaminated media at the OU-3 and OU-4 subsites include mine waste (source material), soils, groundwater, sediments, and surface water. The contaminants of concern (COCs) are zinc, lead, and cadmium. The contamination was caused by lead and zinc ore mining and processing that began in Kansas in the 1870s and continued until 1970. The mining and processing generated chat piles and tailings that are the sources of the COCs.

The EPA placed the Site on the National Priorities List (NPL), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 8, 1983, 48 Fed. Reg. 40658. Subsequent to the NPL listing, investigation of the subsites has consisted of the RI/FS, the FS Addendum, the ROD, various RA reports, successive Five-Year Review Reports, and Proposed Plan that form the basis for this ROD Amendment, plus visits by the EPA, the KDHE, and the USFWS to the subsites.

The EPA, through its enforcement authorities, negotiated an Administrative Order on Consent (AOC) with certain potentially responsible parties (PRPs) to conduct the RI/FS for both subsites. The PRPs performing these activities under the AOC were Cyprus Amax Minerals Corporation (corporate successor is currently Phelps Dodge Corporation); ASARCO, Inc.; Gold Fields American Corporation; Blue Tee Corporation; NL Industries, Inc.; St. Joe Minerals Corporation (corporate successor is currently The Doe Run Co.); and Sun Company, Inc. Following the submittal of the RI/FS, the EPA requested and received an FS Addendum from the PRPs, detailing an additional, EPA-suggested remedial alternative. The FS Addendum remedial alternative subsequently formed the basis of a Proposed Plan generated by the EPA. After considering public and PRP comments on the Proposed Plan, the EPA published its selected remedy, a mixture of residential soil remediation and source reduction, for the Baxter Springs and Treece subsites in a ROD in August 1997. A Consent Decree for the planned Remedial Design (RD) and RA for both subsites was formalized in 1999 with the same PRPs who conducted the RI/FS. Additionally, bankruptcy funds were recovered from an additional PRP, Eagle-Picher Industries, Inc., and utilized for response actions at the Baxter Springs and Treece subsites.

As summarized in the ROD, an exposure study conducted by the Agency for Toxic Substances and Disease Registry at a nearby subsite in Cherokee County in 1996 found a 10.5% exceedance of blood lead levels above 10 micrograms per deciliter (ug/dl) of blood for a hypothetical child. This actual rate of child blood lead exceedance is in excess of EPA's goal for residential lead sites of no more than a 5% chance of any child exceeding 10 ug/dl. Additionally, the human health risk assessment used the applicable Integrated Exposure Uptake Biokinetic Model (IEUBK Model) to simulate lead exposure to children. The IEUBK model indicated unacceptable risk to children due to elevated lead concentrations in soil. Cadmium was also a COC for human health due to potential ingestion of groundwater and locally grown vegetables. Similarly, the ecological risk assessment indicated a significant and unacceptable risk to aquatic organisms and terrestrial fish predators from elevated cadmium, lead, and zinc concentrations.

Based on these risks, the ROD evaluated a select number of preferred alternatives from the FS and FS Addendum using the nine NCP criteria. Ultimately, the selected remedy for both subsites included investigation and potential remediation of residential yards impacted by mine waste; closure and abandonment of poorly constructed, existing deep water wells and borings to prevent contamination migration from the upper aquifer to the lower aquifer; and institutional controls on future development. Additionally, for the Baxter Springs subsite, the selected remedy included excavation, consolidation, and capping of select mine waste based on its proximity to or location in streams; select stream rechannelization; and construction of stream diversion/control structures. The selected remedy did not meet the surface water quality standards under the Clean Water Act or the groundwater drinking water standards for the shallow aquifer under the Safe

Drinking Water Act due to technical impracticability. The TI waiver ensured a similar surface water approach to that employed at the site adjacent to and downstream of Treece, the Tar Creek Superfund Site in Oklahoma, which used a fund-balancing waiver in the 1980s for select surface water ARARs.

At Baxter Springs, the residential aspect of the RA included sampling and remediation, as necessary, of residential soils from properties impacted by mining activities. These activities consisted of the importation of mine waste from nearby waste accumulations for residential purposes (landscaping, fill material, driveway material, etc.), as well as erosion of wastes from these areas. Wastes also migrated into stream systems and could have been transported to residential areas near streams during flood events. Mine waste is prevalent in the western area of the Baxter Springs community; thus, most of the residential effort was targeted in this area. Properties with values exceeding 800 parts per million (ppm) lead or 75 ppm cadmium (based on discrete samples rather than composite samples suggested by later EPA guidance) were excavated until lead and cadmium levels were less than 500 ppm and 25 ppm, respectively, or until a maximum excavation depth of one foot was achieved. Properties were backfilled with clean native soils and revegetated. The same criteria were utilized for residential work at other OUs at the Site, including Treece (OU-4). At the Baxter Springs subsite, 441 properties were sampled and 46 yards were remediated.

The mine waste cleanup portion at Baxter Springs included the removal of mine waste from select minor streams and drainages, draining and capping several tailings impoundments, and grading, consolidating, and capping a major chat pile, followed by revegetation of all disturbed areas. The revegetation seed mixture consisted of tall, warm-season native grasses. This mine waste cleanup addressed mine waste accumulations that contributed major loadings to surface water bodies. Approximately 160 acres or 700,000 cubic yards of mine waste were remediated at the Baxter Springs subsite. This work was completed in 2004 and is currently in the long-term operation and maintenance (O&M) phase. Some surficial accumulations of mine waste were not addressed by the remedy at the time because they were deemed to not be significant contributors to the degradation of surface water. Figure 5 shows the remediated mine waste locations.

At the Treece subsite, the RA consisted of a residential soil cleanup. Just as at Baxter Springs, the town of Treece is located near several former mining areas and waste from these areas were transported to residential locations for a variety of purposes such as driveway construction, landscaping, fill material, and alley/road construction. The residential soil remediation consisted of the same trigger criteria and yard construction as the Baxter Springs subsite. The residential work at OU-4 was completed by the PRPs in 2000 under the same 1999 Consent Decree as the OU-3 work and is in the O&M phase. A total of 148 properties were tested and 41 yards were remediated. Additional components of the Treece subsite response action included a well search to determine if any residents in the Treece area were consuming contaminated water from private water wells followed by the abandonment of these wells when identified. Moreover, any deep wells providing a conduit to transmit contaminated water from the upper aquifer to the lower pristine aquifer were to be abandoned under the Treece cleanup. Well search activities did not identify any deep wells transmitting contaminants to the lower clean

aquifer or any residents consuming impacted groundwater. The town of Treece is served by a municipal water system regulated by the state and provides safe drinking water. Nonresidential mine waste at the Treece subsite was not addressed by the remedy.

During the course of previous Baxter Springs and Treece subsite activities, as well as for work at other subsites within the Site, the EPA and the KDHE have conducted numerous public meetings and availability sessions, distributed and mailed factsheets, and been interviewed by local print and broadcast media outlets. Additionally, several Site tours have been conducted for many diverse groups inclusive of federal and state agencies, universities, professional organizations, and political entities.

D. SITE CHARACTERISTICS

The mining-related physical characteristics of the subsites include mine shafts, mine subsidence pits, impoundment tailings, chat piles, overburden piles, and bull rock piles. Milling wastes are grouped into two broad categories —chat and tailings—, while nonmilling wastes are also grouped into the two categories of overburden and bull rock. Chat is composed of gravel and sand-sized materials that are typically found in large piles, while tailings are fine, silt to clay-sized wastes that are typically found in areas impounded by berms or dikes. Chat and tailings are the hazardous source materials of concern due to elevated levels of heavy metals, especially zinc, lead, and cadmium. The average lead concentration in the tailings was approximately five times higher than the average lead concentration in the chat, while the average concentration of cadmium and zinc in the tailings relative to chat was approximately 2.7 and 2.6 times higher, respectively. Thus, overall, the finer particles (tailings) are more highly concentrated in the COCs than the larger particles (chat). Furthermore, the mine waste also contains detectable levels of the hazardous substances arsenic, copper, mercury, and manganese, although these metals were determined to not be risk drivers. Previously some of the berms or dikes around tailings impoundments have eroded or been overtopped and the tailings have washed into nearby streams (outwash tailings). There are five major areas of these outwash tailings associated with Tar Creek at the Treece subsite and two outwash tailings areas remain at the Baxter Springs subsite. These outwash tailings are major sources of contamination to stream sediment and surface water. Finally, some soils in the immediate vicinity of the mine waste have elevated levels of metals, likely the result of several transport processes, including windblown dust from the mine waste, surface water flows, groundwater seeps, and redistribution from chat removal or quarrying operations. Overall, the primary source material to the subsites is the chat piles, tailings, and outwash tailings. The acreage and/or volume of each type of mine waste is summarized in Table 1 for both subsites. Since the ROD, subsequent commercial chat sales have reduced the overall mine waste volume at approximately six chat piles located at the Treece subsite. The RA at the Baxter Springs subsite has also reduced the volume of waste. The mine waste actually remaining at both subsites will be more accurately determined during the project's RD phase.

Overburden is typically found in piles composed of large boulder-sized material predominantly comprised of shale and limestone. This nonhazardous material was removed or excavated in order to reach the deeper ore-bearing zones. Bull rock is a local term for the cobble- to boulder-sized material typically found in cone-shaped piles and comprised of cherty

limestone and breccia. Bull rock is material that did not meet milling requirements and may also consist of overburden materials removed prior to reaching the prime ore-bearing zones. Bull rock may exhibit low-grade mineralization but is generally considered to be nonhazardous.

The mining areas also include several shafts and collapse features that are filled with either surface water and/or groundwater, depending upon the characteristics of the individual feature. The ponds or collapse features develop due to the extensive amount of undermining within the subsites. Collapses result in areas underlain by subsurface room and pillar mines. The underground mines were situated approximately 200 to 500 feet below the surface with the deeper mines located near Treece. Mine shafts were used for access and ore extraction. There are also some exploration drill holes and air shafts within the subsites. Also, open shafts and pits receive metals-laden run off from mine tailings and chat piles in many instances.

All surface water flows in the Treece subsite are to Tar Creek, while that of the Baxter Spring subsite flows to either Willow Creek or Spring Branch. Tar Creek, the major geographic feature impacting remedy selection at the Treece subsite flows south into Oklahoma and drains into the Neosho River approximately ten miles south of the subsite. The major geographic features impacting remedy selection at the Baxter Springs subsite are Willow Creek, Spring Branch, and their tributaries. The Baxter Springs subsite drains into the Spring River on the eastern side of the subsite. The streams at both sites are plains-type streams underlain by Pennsylvanian-age shales and Mississippian-age limestones. Both the Spring River and Neosho River are major interstate streams. All of these surface water bodies are contaminated by the subsites' mine waste, which adversely affect aquatic life and possibly waterfowl. As explained in more detail in Section G, the KDHE has determined that Tar Creek and streams within the Spring River watershed are either partially or not at all supporting aquatic life due to metals loading. Additionally, mining-related zinc load contributions to the Spring River by Willow Creek and Spring Branch and to the Neosho River by Tar Creek and its tributaries are documented in the ROD at 24,000 pounds per year and 220,000 pounds per year, respectively.

From surface to depth, the subsites are underlain by a shale formation of Pennsylvanian age, a nonyielding limestone formation of Mississippian age, and two aquifers that are separated by a confining unit. The Pennsylvanian shale yields less than ten gallons of water a minute. Nonvisible flow and ponded water in streams during dry periods indicates little water storage capacity by the underlying shale. The uppermost portion of the Mississippian limestones does not yield water to wells. These two formations together, which lie above the shallow aquifer, are between zero and 220 feet thick. The shallow upper aquifer is locally called the Boone Aquifer and is another Mississippian-age limestone unit. Over four measuring events during the RI, the potentiometric water level ranged between 27.58 feet below ground surface (bgs) and 190.25 feet bgs. This excludes the Bruger shaft whose surficial overflow was diverted from nearby Willow Creek as part of the 1997 ROD. Regional groundwater flow in the upper aquifer is west to northwest. The lower sandy dolomitic aquifer (known as the Roubidoux) is confined and the regional groundwater flow direction is west to south. Public water supply districts provide water from the deep aquifer, mixed with Spring River water in eastern Baxter Springs for that city according to the RI, to residents of the subsites. Shallow groundwater in the mine workings typically exceeds water quality standards but the extent of impacted groundwater has not been characterized to date.

Past practices in the Site have resulted in chat being distributed to residential yards as fill or driveway material. The sampling results of residential yards in proximity to the mine waste in these subsites identified a number of residential properties that required remediation, as has occurred at other subsites in Cherokee County. Subsequent actions taken regarding these residential hazards are summarized previously in Section C.

Since the RI was completed in 1993, the Kansas Department of Wildlife and Parks (KDWP) has updated and changed the status of a number of threatened and endangered species in Cherokee County. In total, there are nine threatened or endangered species whose designated critical habitats are partially within the subsites, mostly within the eastern portion of the Baxter Springs subsite. The nine threatened and endangered species consist of the following: cave salamander, eastern narrowmouth toad, eastern newt, green frog, grotto salamander, longtail salamander, many-ribbed salamander, redbelly snake, and the spring peeper. Recent KDWP fact sheets on these species have been included in the AR.

E. CURRENT AND POTENTIAL FUTURE LAND USE AND RESOURCE USES

Currently the subsites are accessible by paved roads, gravel roads, or by foot. Several rail lines traverse both areas, as does Tar Creek and its tributaries at the Treece subsite, and Willow Creek, Spring Branch, and their tributaries at the Baxter Springs subsite. At both subsites, large areas are and will probably continue to be used for agriculture (primarily grazing) and residences. The nearby areas of chat piles, tailings, and subsidence are not vegetated and are essentially unused by humans. However, at both sites to varying degrees, residences and residential features (e.g., baseball playing field) abut or are situated on unremediated mine waste. Select chat piles in the subsites have been and continue to be exploited commercially to supply aggregate for roadway construction. Maps of the subsites (Figures 2, 3, and 4) attached to this Proposed Plan depict some major features of the area as well as the extent of the chat piles, tailings impoundments, and outwash tailings.

F. SCOPE AND ROLE OF OPERABLE UNITS

The Site is arranged into the following seven OUs for administrative efficiency in conducting environmental cleanups: OU-1, Galena Alternate Water Supply; OU-2, Spring River Basin; OU-3, Baxter Springs subsite; OU-4, Treece subsite; OU-5, Galena Groundwater/Surface Water; OU-6, Badger, Lawton, Waco, and Crestline subsites; and OU-7, Galena Residential Soils. A summation of previous remedial actions at the Baxter Springs and Treece subsites is offered in Section C. Brief overviews of the status of the other Cherokee County OUs are provided below.

OU-1: Galena Alternate Water Supply – This OU is in the long-term O&M phase. The completed EPA-funded cleanup consisted of providing a permanent water supply to over 400 residences by the installation of deep aquifer drinking water supply wells and the formation of a rural water district. The district has expanded by over 100 new hook-ups (paid for by residents) since the cleanup was completed in 1994 and serves the rural areas of Galena, Kansas (over 500 total hook-ups).

OU-2: Spring River Basin – This OU consists of the Spring River basin in Kansas, and, as such, it is directly influenced by the other subsite cleanups at the Site as well as upstream cleanups planned for the Jasper County, Missouri, Superfund Site. The work is in the characterization phase and will likely represent the final area to be addressed at the Site.

OU-3: Baxter Springs Subsite – Previous response actions at OU-3 are summarized in Section C, Site Background.

OU-4: Treece Subsite – Previous response actions at OU-4 are summarized in Section C, Site Background.

OU-5: Galena Groundwater/Surface Water – The EPA-funded cleanup was completed in 1995 and the OU is in the long-term O&M phase. The work included the remediation of 900 acres of mine waste and the abandonment of deep wells acting as a potential conduit for contaminants to migrate from the upper impacted aquifer to the lower pristine aquifer. A subsequent multi-year ecological study conducted by the University of Kansas Biological Survey indicated some improvement to Short Creek following the cleanup. The KDHE is currently evaluating ongoing O&M costs at this OU.

OU-6: Badger, Lawton, Waco, and Crestline Subsites – This OU is reaching the end of the RD/RA negotiation phase with the PRPs. The RI/FS was completed in 2004 under an AOC issued in 1998 and a ROD was issued for the cleanup in 2004. The RD/RA negotiations are anticipated to be completed in 2006 and result in two Consent Decrees: one for the Waco subsite and one for the Crestline subsite. The Badger and Lawton RD/RA processes will be conducted as EPA fund-lead actions.

OU-7: Galena Residential Soils – The EPA-funded cleanup was completed in 2001 and is now in the long-term O&M phase. The work included the characterization of nearly 1,500 residential properties and the remediation of over 700 properties.

G. POST REMEDIAL ACTION INFORMATION AND DATA

Since the ROD for these subsites was released in August 1997, additional studies, observations, risk calculations, and information have been collected and published which together drive the remedial action selected in this document, particularly the ecological scientific studies and risk calculations. First, several pertinent ecological scientific studies have been published and additional regional ecological risk information has been identified. Additionally, three new residences in Treece have been constructed on or near mine waste in the past five years. Next, several rounds of water and sediment samples from surface water bodies have been collected by various parties at both subsites and the USGS has released new publications on this topic. Finally, as documented in the 2005 Five-Year Review Report, Region 6 and the state of Oklahoma are investigating surficial mine waste remedial actions at the Tar Creek Superfund Site adjacent to and downstream of the Treece subsite. The general public and local governments have also provided input that is discussed later in this section. These recent actions and new information are described in more detail below.

Ecological Scientific Studies: Since the ROD, several studies have been published demonstrating the deleterious effects of mine waste on a number of ecological endpoints. First, bird toxicity from exposure to mine waste or mining-impacted media (water, sediment, etc.) has been examined and reported in scientific journals in the past several years. For instance, zinc toxicosis has been documented in wild birds collected at the Site and the scientific findings indicate that the TSMD is the only likely location with sufficient zinc concentrations capable of causing the observed effects. These studies have shown zinc toxicity to avian species that had been unreported in the past. Additionally, mussel studies (by Dr. R. Angelo of KDHE, presented at the TSMD Forum in 2005 and Sediment Symposium at the Association of State and Territorial Solid Waste Management Officials in 2006) for the Spring River have been released over the past several years. These findings indicate significant impacts to local mussel populations as a result of surficial mine waste washing into stream systems and impacting the surface water and sediments.

Moreover, EPA ecologists recently developed Preliminary Remediation Goals (PRGs) for metals-impacted soil for select terrestrial receptors for the Site based on site-specific data, including bioconcentration factors. It was determined that ecological PRGs for soil ranged from 1.0 to 10.0 ppm for cadmium; 377 to 1,175 ppm for lead; and 156 to 1,076 ppm for zinc, respectively. As shown in the RI, mill-site soils ("soils from obviously disturbed or affected areas which contain visible chat fragments [and possible tailings)") had average concentrations of 55 ppm, 410 ppm, and 8,300 ppm for cadmium, lead, and zinc, respectively. These average concentrations, which are similar to the average chat concentrations as documented in the RI, exceed all the low-range ecological PRGs and the high-range ecological PRGs for cadmium and zinc, and indicate a risk for ecological receptors.

Furthermore, recent information also indicates possible impacts to local horses. At least three deceased foals from the OU-4 area were examined by a local veterinarian. The findings indicated possible heavy metal impacts/interactions from mine waste or mining-impacted media was the likely cause of death. Other horses at OU-4 are undergoing treatment for effects thought to be a result of mining impacts. Zinc toxicosis in the TSMD has been reported for decades and particularly affects foals. An EPA ecological risk assessor calculated high and low potentials for zinc toxicity for foals in pastures. These potentials were calculated based on two assumptions: first, the potentials were done specifically for foals, which are more sensitive to zinc toxicity, so lower body weights were used in the Average Daily Dose equation; and second, that as vegetation becomes more stunted due to increasing soil zinc concentrations, horses would ingest increasing amounts of soil while attempting to forage for food. By inserting Lowest-Observed-Adverse-Effect Level doses in the Average Daily Dose equation and back-calculating, a soil concentration of 8,500 ppm was determined to be the zinc concentration at which a high potential for zinc toxicity in horses exists. Using a similar back-calculating process and No-Observed-Adverse-Effect Level doses in the Average Daily Dose equation, a soil concentration of 1,000 ppm was determined to be the zinc concentration below which horses are unlikely to be affected by zinc toxicity. As documented in the RI, zinc in chat and tailings piles ranges from 3,100 ppm to 13,000 ppm and 6,400 ppm to 52,000 ppm, respectively—far greater than the 1,000 ppm concentration below which horses are unlikely to be affected. Thus, although the horses in the TSMD are not feral, it is clear that unremediated mine waste is available for uptake by a wide variety of ecological receptors and represent a continuing threat.

Region 6 and State of Oklahoma Actions: The previous EPA, Region 7 OU-4 remedy did not address any surficial mine waste and employed a TI waiver for select chemical ARARs for surface water (Tar Creek and its tributaries) and groundwater in the shallow aquifer. This approach was similar to an earlier remedial approach for surface water (Tar Creek and its tributaries) taken by Region 6 at the adjoining and downstream Tar Creek Superfund Site. According to the Oklahoma Water Resources Board's Water Quality Standards (WQS) and previous Five-Year Review Report for the Tar Creek Superfund Site, Tar Creek's assigned beneficial uses were downgraded in the 1980s to Habitat Limited Aquatic Community for Fish & Wildlife Propagation and Secondary Body Contact Recreation (e.g., boating, fishing, wading, etc.). This was because " human caused conditions or sources of pollution prevent the attainment of the [Warm Water Aquatic Community] use and cannot be remedied or would cause more environmental damage to correct than to leave in place." Therefore, historically, the state of Oklahoma and Region 6 waived the surface water criteria for the Tar Creek basin on the basis of fund-balancing, and Region 7 waived surface water criteria based on a TI approach for the Treece subsite. As documented in the Region 6 Five-Year Review Report dated April 2000, surface water in Tar Creek in Oklahoma continues to fail several of the applicable WQS, including standards for cadmium, lead, and zinc. In order to meet these criteria, source reduction of surficial mine waste in the uppermost section of the stream, particularly at the Treece subsite, will be critical. Additionally, the state of Oklahoma and Region 6 have begun efforts to characterize surficial mine waste at the Tar Creek site, a major contaminant source for the Tar Creek basin. Also, these agencies and others have joined a multi-state, multi-organizational effort aimed at characterizing and addressing impacts to surface water and sediments in Tar Creek and the Spring River basins. The new approach in Region 6 and Oklahoma necessitates a complementary approach in Region 7 and Kansas.

Institutional Controls: A site-wide institutional control was implemented in 2003 by a resolution by the Cherokee County Commission at the request of the EPA with the support of the KDHE to eliminate the use of chat mine waste as surface material for all roads within Cherokee County. However, other aspects of the institutional controls program have not been fully implemented to date, including controls to prohibit the unauthorized taking and use of the mine waste for inappropriate purposes such as residential applications, or restrictions on residential construction. In their absence, there have been three documented instances of families relocating to mine waste areas at OU-4. This necessitated testing these properties and the results indicated that one property's yard needed to be remediated. This property was remediated in the spring of 2006. Moreover, some children residing in two of these three households have documented blood lead levels greater than 10 ug/dL, including the residence whose yard was remediated this past spring. On a broader scale, toxic tort lawsuits by families with impacted children have occurred in the Oklahoma portion of the TSMD in the past five years. These legal actions and environmental harm to children are a result of unremediated mine waste. There is a possibility of this situation occurring at the Site as well as other areas with uncontrolled wastes.

Total Maximum Daily Loads and Scientific Studies: The state of Kansas has established TMDLs for metals for the Tar Creek and the Spring River watersheds that seek to control and minimize impacts to the streams and watersheds. Specifically, since periodic monitoring began at Tar Creek in 1993, 66% of the surface water samples exceeded the chronic aquatic life criterion for lead. For zinc and cadmium, 100% of the surface water samples exceeded the chronic aquatic life criterion for Tar Creek. Thus, the KDHE has determined that Tar Creek is not supporting aquatic

life, one of its designated uses. Additionally, the TMDL indicated that two different mechanisms appeared to be responsible for metal exceedances: one for the lead exceedances and a different one for the cadmium and zinc exceedances. Since they occurred mostly with increased run off, the lead exceedances seemed to be due to mine waste run off. In contrast, the cadmium and zinc exceedances were determined to be the result of base flow, which was water percolating through the mine waste and seeping into Tar Creek. However, both of these mechanisms are the result of the presence of mine waste at the surface. In the Spring River watershed, while the KDHE did not focus specifically on Willow Creek or Spring Branch, the overall water quality was poor, consistently exceeding TMDLs for cadmium, lead, and zinc. The KDHE determined that the watershed was not supporting its domestic water designated use and only partially supporting its aquatic life designated use. Additionally, the KDHE documented several biological studies of macro-invertebrates conducted along the Spring River and various tributaries. Overall, these studies show a larger and more diverse biological community upstream with lower metal concentrations as compared to downstream locations exhibiting higher metal concentrations. Finally, since the completion of the remedy specified in the ROD, periodic O&M has been conducted at the Baxter Springs subsite, including surface water and sediment sampling of Willow Creek and Spring Branch. Results of historical and recent samples collected by a PRP consultant and the EPA have indicated overall decreases in the levels of cadmium, lead, and zinc, but the levels continue to be elevated. Unremediated mine waste serves as a continual loading source of heavy metals to the Tar Creek and Spring River watersheds, and are a detriment to the TMDL criteria.

Additional Scientific Studies: In 2004, the USGS conducted streambed sediment sampling across the Site. This report can be found in the AR (Assessment of Contaminated Streambed Sediment in the Kansas Part of the Historic Tri-State Lead and Zinc Mining District, Cherokee County, 2004). The report indicated that cadmium, lead, and zinc sediment concentrations ranged from 1.2 to 270 milligrams per kilogram (mg/kg); 58 to 3,400 mg/kg; and 250 to 41,000 mg/kg, respectively, at various points in Tar Creek and its tributary Lytle Creek. In Spring Branch, cadmium, lead and zinc sediment concentrations ranged from 25 to 180 mg/kg, 340 to 810 mg/kg, and 4,200 to 16,000 mg/kg, respectively. In Willow Creek and its unnamed tributary, cadmium, lead, and zinc sediment concentrations ranged from 2.7 to 29 mg/kg, 83 to 520 mg/kg, and 640 to 8,800 mg/kg, respectively.

In addition, the USGS compared the sample concentrations to the less stringent of either the EPA's 1998 recommended sediment quality guidelines or the consensus-based, sediment-quality guidelines developed by MacDonald and others in 2000. The threshold effects level (TEL) and threshold effects concentration (TEC) are sediment concentrations below which toxic effects rarely occur and effects on sediment-dwelling organisms are not expected to occur, respectively. The probable effects concentration (PEC) is a sediment concentration above which adverse effects are likely to occur on sediment-dwelling organisms. At the 11 Tar Creek and tributary sampling locations, all the samples exceeded the applicable TEC or TEL for cadmium, lead, and zinc. For cadmium and lead, 73% of the samples exceeded their respective PECs, while 91% of zinc samples exceeded the zinc PEC. At the four Spring Branch sampling locations, all of the samples exceeded their appropriate TEC, TEL, and PEC for cadmium, lead, and zinc. At the six Willow Creek and tributary sampling locations, all the samples exceeded the applicable TEC and TEL for cadmium, lead, and zinc, while the percentage of samples exceeding the PEC for

these three metals were 67%, 67%, and 100%, respectively. Finally, the USGS proposed the lowest detected concentrations of cadmium, lead, and zinc (0.6, 20, and 100 mg/kg, respectively) as *background* or pre-mining sediment concentrations. These proposed *background* concentrations are close to the TECs proposed as sediment concentration guidelines by MacDonald et. al. (2000) for cadmium, lead, and zinc, which are 0.99 ppm, 35.8 ppm, and 121 ppm, respectively. The Tar Creek, Spring Branch, and Willow Creek sediment results all exceeded the TECs and estimated *background* concentrations. A USGS study focusing on sediment loads to Empire Lake (an impoundment of the Spring River) will be forthcoming later this year and is expected to reflect trends similar to the ones described above.

Another USGS study investigated metals loading from mine waste leaching and mine discharge into Tar Creek at a portion of the Tar Creek Superfund Site. Although the report has not been finalized, USGS personnel recently gave a presentation on the investigation which was conducted during low flow summer conditions. Overall, the findings indicated that significant loads of cadmium, lead, and zinc to Tar Creek resulted from chat over a period of minimal rainfall. Preliminary results indicate that metal-contaminated water seeps out of the large mine waste piles into Tar Creek even during periods of minimal rainwater recharge, adding greatly to the surface water contamination. A copy of the finalized report will be added to the AR upon its completion. In summary, mining operations and mine waste have impacted subsite surface water and sediment and present a substantial hazard to aquatic life and certain avian species.

Public and Local Government Input: Historical and recent community feedback on the remedy at both the Treece and Baxter Springs subsites has indicated approval and urged remediation of the remaining mine waste. Historically, several citizens residing in the Baxter Springs and Treece subsites have contacted the EPA expressing a desire for the remaining mining wastes to be addressed. Elected officials representing the cities of Baxter Springs and Treece have also contacted the EPA with requests to address the remaining mining wastes in and around these communities. Recently, citizens of Treece, Kansas, have expressed a strong interest to be relocated from this community based on the probability of similar actions being conducted across the state line in Oklahoma mostly due to possible underground mine collapse. In summary, there is strong local support from citizens and government officials for the remediation of the remaining wastes and there is a recent desire of citizens in Treece to be relocated. These policy and programmatic changes (in addition to new scientific information) represent a strong case for addressing all remaining mine waste at the Baxter Springs and Treece subsites. The social and physical hazard aspects of citizen relocation are not subject to the EPA's environmental mandate.

H. SUMMARY OF SITE RISKS

Ecological Risks

Ecological risks constitute the primary site risks and are present due to elevated levels of heavy metals in mine waste, soils, sediments, groundwater, and surface water within the subsites. Zinc, lead, and cadmium are the major COCs for ecological receptors and also represent the principal threats. The primary exposure scenario consists of heavy metals uptake by ecological receptors such as fish, macro-invertebrates, birds, and other terrestrial species. Ecological receptors are exposed to heavy metals primarily by ingestion of mine waste, soils, sediments,

surface water, vegetation, and prey as well as inhalation of toxic dusts. Hazard quotients (a measure of ecological risk) have been calculated in many formerly mined areas of the TSMD and they indicate the presence of ecological risks (hazard quotient values > 1).

Based on the RI for OU-3 and OU-4, the average concentrations of cadmium, lead, and zinc in chat mine waste are 45 ppm, 750 ppm, and 8,056 ppm, respectively. The average concentrations in tailings are 124 ppm cadmium; 3,800 ppm lead; and 21,600 ppm zinc. Additionally, the maximum values of cadmium, lead, and zinc in chat mining wastes are 89 ppm; 1,660 ppm;, and 13,000 ppm zinc respectively, while the maximum values for tailings are 540 ppm cadmium; 13,000 ppm lead; and 52,000 ppm zinc. Elevated levels of these three heavy metals in surface water and stream sediment at the subsites and their comparison to sediment guidelines have been documented (as summarized previously in Section G) and illustrate significant risks to ecological receptors.

Human Health Risks

Human health risks are present due to elevated levels of heavy metals in mine waste, soils, sediments, groundwater, and surface water within the subsites. Lead and cadmium are the main COCs for human health risks. The primary exposure route for human health risks is ingestion of lead-contaminated residential yard soils by children up to six years of age. Other human exposure routes include outdoor activities in areas of mine waste, consumption of impacted groundwater or surface water, and consumption of contaminated fish or other species. As documented in the KDHE's TMDL report for the Spring River watershed, mean metal concentrations for cadmium, lead, and zinc in asian clams in the Spring River at Baxter Springs were 2.0 ppm, 7.4 ppm, and 550 ppm, respectively. The high metal concentrations have resulted in a shellfish consumption advisory for the Spring River to be issued by KDHE in 2006. Under current site scenarios, the two primary human health risks are children residing in the three new residences recently built on or near mine waste and potential future residents who may construct homes in mine-waste areas or conduct outdoor activities in these locations.

It is EPA's current judgment as the lead agency that the selected alternative identified in this ROD Amendment is necessary to protect public health and welfare of the environment from actual or threatened releases of hazardous substances into the environment. This view is also held by KDHE, the support agency.

I. REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are cleanup goals that are addressed by reducing or eliminating contaminants or exposure routes. RAOs are mediaspecific and are provided in Table 2. There are six total RAOs: two for source materials, two for soils, and two for surface water.

The soils and source materials RAOs specify the prevention of ecological and human health risks associated with the exposure to soils and mine waste containing heavy metals. These RAOs are met by relocating, consolidating, subaqueously disposing, and capping all surface accumulations of soils and mine waste. The contaminated media will be rendered inaccessible by human or ecological receptors and thus the RAO will be satisfied.

The surface water RAOs specify the prevention of ecological risks by reducing the exposures related to metals-contaminated surface water. These RAOs, in combination with the soil and source materials actions, will reduce or eliminate levels of heavy metals in surface water.

For OU-3 and OU-4, the selected alternative is expected to accomplish a reduction of cadmium, lead, and zinc loading on the Spring and Neosho Rivers as well as their tributaries (Willow Creek, Spring Branch, Tar Creek, and their tributaries). Moreover, the complete removal of source material eliminates ecological and human health risk pathways resulting from the mine waste and reduces the degradation of groundwater via source removal and minimization of run off infiltration. With the exception of a few residences recently constructed on and near mine waste in Treece, human exposure via residential soils in the proximity of the subsites is not currently at an unacceptable level due to past remedial actions, and drinking water is supplied by municipal water systems with wells in the deep pristine aquifer. The public will continue to be encouraged to use a public water supply for domestic needs. For the most part, the human health and ecological risks are associated with nonresidential mine waste. The selected alternative includes new additional institutional controls to augment the existing controls specified on a county-wide basis in a prior ROD. The selected alternative endorses the continued implementation of the previously proposed institutional controls.

J. PREFERRED REMEDIAL ALTERNATIVE

Eight basic cleanup alternatives —with a total of 18 individual alternatives— were evaluated in the historical 1993 Baxter Springs and Treece FS in order to select the optimum approach to address site risks. Although eight candidate alternatives were initially carried forward for a more detailed assessment of their viability, none were selected. Instead, the EPA, state of Kansas, and PRPs came to an agreement after the submittal of a PRP FS Addendum to implement an approach known as Alternative 3b. A detailed description of this remedy and its subsequent implementation are documented in the 1997 ROD and final RA reports for both subsites. The 1997 ROD addressed all metals-impacted residential properties at the Baxter Springs and Treece subsites as well as a significant portion of the surficial mine waste and outwash tailings at the Baxter Springs subsite. The 1997 ROD did not address the surficial mine waste at the Treece subsite. Figure 5 shows the surficial mine waste addressed in Baxter Springs under the 1997 ROD. Table 3 contrasts the 1997 ROD remedy with the current ROD Amendment.

While this remedy was successfully implemented, based on new and additional information obtained in the past five years (Section G), as well as being consistent with other remedial actions at the site as well as Oklahoma's Tar Creek Superfund Site, the EPA has determined that it is now appropriate to address the remaining source materials at OU-3 and OU-4 to fully protect human health and the environment. The cleanup alternative from the FS which is most similar to EPA's selected alternative is Alternative 8A. The EPA's selected remedy will be designated Modified Alternative 8A and is summarized below:

Modified Alternative 8A: Complete Source Removal, Consolidation, Capping and On-Site Disposal:

This remedy addresses all surficial mine waste by conventional excavation and/or consolidation, and multi-layer (borrow clay and topsoil, together approximately 18-inches thick) capping of excavated mine waste in addition to select subaqueous disposal of the mine waste. Wastes to be addressed include all mining and mill wastes that are actively contributing metals to streams or potentially threatening human or ecological receptors. The mine waste will be consolidated and capped above the ground surface, capped in place, or disposed in collapses, shafts, or pits (subaqueous disposal) and capped. Erosion and drainage controls will be utilized during implementation to limit short-term impacts. Although the selected alternative predominantly utilizes conventional consolidation and capping methods for source disposal, select mine subsidence features may be used as permanent repositories for excavated mine waste if conditions are deemed to be favorable. However, subsidence pit disposal will not be employed as a remedy near streams or floodplains to ensure unknown groundwater hydrologic impact to surface water does not occur. Before and during the remedy implementation period, subsite chat sales conducted under Best Management Practices (BMPs) will be highly encouraged. The overall approach is to concurrently address nonmarketable mine waste by remediation while encouraging the sale and use of commercial mine waste. Lastly, a previously proposed institutional controls program augmented by new approaches will be implemented, addressing the following elements: restrictions on new residential development in mine waste areas, restrictions on the drilling and installation of new domestic water supply wells, encouragement of local citizens to utilize existing water districts for domestic needs, and the implementation of casing integrity standards and oversight for the design and construction of new deep aquifer supply wells. This remedy addresses the large quantity of source material remaining at OU-3 and OU-4. After implementing the selected alternative, a substantial amount of currently inaccessible land will meet the objective of unlimited use and unrestricted exposure. Additionally, the selected alternative will eliminate surface water and sediment contamination from surficial run off from mine waste. More details on the selected alternative are included in Section M.

The selected alternative is presented in this ROD Amendment without additional written alternatives for several reasons. First, a number of alternatives for these subsites were evaluated previously in the FS, FS Addendum, 1997 Proposed Plan, and 1997 ROD. With regard to the source material, the alternatives differed only in the amount of mine waste removed. In essence, the selected alternative is the same approach with similar costs as Alternative 8A in the FS. Additionally, there is no new remedial technology available since the FS was completed to effectively address the source material. Excavation and consolidation, capping in place, and subaqueous disposal remain the three most effective and common approaches to remediating large amounts of mine waste. Moreover, as indicated earlier in Section G, recent information indicates continued risk to ecological receptors and, to a lesser degree, to human health even after remedial actions were conducted at OU-3 and OU-4. In particular, while the partial source reduction appears to have reduced some ecological risk as evidenced by overall decreased surface water

COC concentrations, unacceptable ecological and human health risk remains at both subsites. Post 1997 ROD data and information indicate that anything less than mine waste removal would continue to represent a threat to receptors. Thus, only one alternative —the selected alternative— is presented in this ROD Amendment.

The main goal of the caps (for mine waste disposed of either subaqueously or left in place) is to prevent exposure to the elevated COC concentrations in the mine waste in perpetuity. The cap must be stable enough to withstand erosional forces such as water and air. A secondary function of the cap is to reduce additional COC loading to the groundwater, even though the shallow aquifer groundwater, chemical-specific ARAR was waived in the 1997 ROD. The EPA considers it inappropriate for the selected alternative to result in additional groundwater contamination. Other considerations include minimizing O&M costs, and securing state and local community acceptance.

To meet these goals, a cap needs to be constructed of appropriate material and be of sufficient thickness. As described in the selected alternative, the components and thickness of the caps are generally the result of previous experience at the Site. Previously at OU-5 (Galena Surface Water/Groundwater), mine waste was covered on a per-acre basis, resulting in an approximate three- to six-inch cap made of a mixture of lime, compost, and prairie hay mulch. After attempting to seed the cap, vegetation failed to take root at approximately 300 acres of the total 900 acres, resulting in excessive O&M costs to repair the cap, borne by the state of Kansas. Alternatively, during the partial source reduction at OU-3, warm-season native grasses were successfully seeded on a cap of approximately six inches of topsoil overlying one foot of clay. This clay for the mine waste caps at OU-3 came from nearby sedimentation basins during their construction. Thus, the sole cost related to the clay is its hauling from its point of origin to the cap. Additionally, OU-3 remedial design work indicates that the 18-inch clay and topsoil layers eliminate greater than 95% of water infiltration through the metal-impacted mine waste to the groundwater. Furthermore, the cap construction at OU-3 has resulted in minimal O&M costs. Consequently, the cap as outlined in the selected alternative is a product of previous site experience. Moreover, future repair and remedial work at OU-5 utilizes the 18-inch cap criteria. Also, all mine waste remediation at OU-6 (Badger, Waco, Lawton, and Crestline subsites) of the Site will use the 18-inch criteria pursuant to the 2004 OU-6 ROD.

In addition to this experience, two other reasons make an 18-inch cap appropriate. First, a stable cap generally requires vegetation to resist erosional forces such as water or wind. In response, a mix of warm-season native grasses was developed for mine waste caps in the TSMD which required minimal mowing, thrived in the Kansas climate, and blended well with the area aesthetically. Successfully used at the previous OU-3 partial source reduction remedy, the grasses' optimal root zone is approximately 18 inches. The cap correspondingly will need to be that approximate depth. Secondly, even at the Baxter Springs subsite's caps, downcutting due to run off was observed along some edges of the cap to approximately one foot, requiring O&M expenditures. Therefore, a cap with a thickness greater than one foot is needed to maintain its protectiveness. It should be noted that the state of Kansas would greatly prefer a two-foot cap,

similar to those mandated for its nearby coal mining sites, but will accept an 18-inch thick cap as part of the selected alternative. Finally, it should be noted that in general, the community has expressed satisfaction with the previous caps, particularly for their appearance as a prairie landscape. As one of the two NCP modifying criteria, community acceptance of mine waste caps (which will remain in the community indefinitely) is important.

With the exception of the shallow aquifer groundwater chemical-specific ARARs (previously waived in the 1997 ROD), this alternative is expected to meet ARARs and be protective of human and ecological receptors. This ROD Amendment retracts the TI waiver for surface water, chemical-specific ARAR (which was part of the 1997 ROD) for several reasons. First, according to the 2005 Five Year Review by Region 6 and the state of Oklahoma, these government agencies are involved with efforts to complete an RI/FS, and human health and ecological risk assessments for OU-4 (mine wastes) at the adjacent Tar Creek Superfund Site. It is expected that a ROD for addressing this mine waste will be issued by Region 6 in the future. Therefore, it is appropriate that Region 7 also issue a decision document (e.g., this ROD Amendment) regarding the remaining upstream mine waste. Secondly, in 1997, the state of Kansas supported the TI waiver based on the lack of downstream mine waste cleanup actions at the Tar Creek Superfund Site. Recently, the state of Kansas has changed this view on the OU-3 and OU-4 mine waste cleanups, mostly due to the recent Region 6 and state of Oklahoma investigations. Finally, additional investigations by the USGS, the publication of the TMDL by the state of Kansas, the depth to the shallow groundwater aquifer, and the overlying shale/nonyielding limestone all indicate that significant surface water metal contamination comes from mine waste and not shallow groundwater. Perhaps the most important aspect is the recent scientific findings that indicate the impacts to surface water are predominantly a result of the presence of surficial mine waste. Therefore, Region 7 believes it is now technically practicable under a ROD Amendment to meet the surface water chemical-specific ARARs.

Additionally, the state of Kansas and local governments may need to facilitate land-use controls as part of the long-term O&M components of the completed remedy in order to protect the integrity of the capped mine waste areas and controls on the use of groundwater for consumption. Deed restrictions are a potential method to prohibit future residential development in mine waste disposal areas. The subsite areas are currently rural and used for agricultural purposes, thus lessening the potential future need for deed restrictions and institutional controls.

Finally, the U.S. Department of the Interior has developed its Preliminary Natural Resource Damage Assessment (NRDA) as Natural Resource Trustee for the TSMD. The EPA and the Trustee have different but complementary roles. The EPA is responsible for the development of response actions to protect human health and the environment. The NRDA is used to identify additional actions, beyond the EPA response, to address natural resources, including restoration of habitats or species diversity, or compensation for the loss of injured natural resources. The EPA will coordinate with the Trustee so that the remedy, to the extent possible, will enhance restoration of habitats and species diversity.

K. EVALUATION OF THE ALTERNATIVE

The NCP requires the EPA to evaluate the selected alternative against nine criteria. Any selected remedy must satisfy all nine criteria before it can be implemented. The nine criteria are divided into the following groupings: two threshold criteria, five balancing criteria, and two modifying criteria. The two threshold criteria are overall protection of human health and the environment, and compliance with ARARs. Table 4 depicts the ARARs for this action. Generally, alternatives must satisfy the two threshold criteria or they are rejected without further considering the remaining criteria. The five balancing criteria consist of the following: long-term effectiveness and permanence; reduction in toxicity, mobility, and volume achieved through treatment; implementability; short-term effectiveness; and cost. Lastly, the two modifying criteria consist of state and community acceptance. The modifying criteria were fully evaluated following state and public input as discussed in this document and the Responsiveness Summary (Appendix A).

Threshold Criteria Evaluation

The threshold criteria of overall protection of human health and the environment and ARARs compliance addresses whether a remedy provides adequate protection by reducing, eliminating, or controlling pathway risks through treatment, engineering, and institutional controls in addition to meeting the ARARs of federal and state laws. Compliance with chemical, location, and action-specific ARARs is required unless a site-specific waiver is justified. This site does not justify any additional waivers of any ARARs.

The selected alternative is a modified version of Alternative 8A from the Baxter Springs and Treece FS and is designated as Modified Alternative 8A (Complete Source Removal, Consolidation, Capping, and On-Site Disposal). This alternative will meet the threshold criteria of protecting human health and the environment and complying with ARARs predominantly through the implementation of engineering controls. Excavation, consolidation, capping in place, potential subaqueous disposal, and revegetation of the remaining surficial mine waste will minimize human and ecological (terrestrial/aquatic organisms and birds) risks by engineering methods. Additionally, the characterization of groundwater conditions in areas of potential subaqueous disposal and institutional controls will help maintain protection of the environment and human health. All chemical, location, and action-specific ARARs will be met by the selected alternative other than the shallow groundwater chemical-specific ARAR previously waived under the 1997 ROD. Any risks due to unremediated sediment will be addressed in the future after all site mine waste cleanups are finished.

Balancing Criteria Evaluation

Descriptions of the five balancing criteria include the following: long-term effectiveness and permanence addresses the ability of a remedy to maintain protection of human health and the environment over time, inclusive of residual risks following implementation; reduction in toxicity, mobility, or volume through treatment addresses the degree to which a remedy employs recycling or treatment methodologies to control principal threats; implementability describes the technical and administrative feasibility of implementing a cleanup approach including the

difficulty of undertaking additional follow-up actions; short-term effectiveness addresses the time required for implementation and any adverse impacts during implementation; and cost describes the direct and indirect capital costs of the alternative. The balancing criteria are applied to the selected alternative since it satisfies the earlier threshold criteria.

Modified Alternative 8A meets all five of the balancing criteria. The alternative has a high degree of long-term effectiveness and permanence as contrasted to any of the other alternatives proposed in the FS, provided the engineered caps and institutional controls are adequately maintained long term. In cases of subaqueous mine waste disposal, the selected alternative may potentially have a lesser degree of long-term effectiveness and permanence since it is a relatively new disposal approach. A recent pilot study did not conclusively illustrate the long-term effectiveness and permanence of subaqueous mine waste disposal due to ongoing potential concerns related to groundwater impacts. However, the pilot study results appear sufficient enough to potentially employ this remedy in a larger scale remedial application as a technology demonstration or validation approach in areas not near streams. Overall, when the remedy is completed, there will be more land available for unencumbered use. There are anticipated to be minimal risks to human health and the environment following implementation of the remedy.

Modified Alternative 8A has a high degree of contaminant toxicity, mobility and volume reduction through excavation, consolidation, and multi-layer capping. These caps essentially alleviate infiltration which ultimately affects dissolved metal concentrations in groundwater and dispersal of contaminants by wind or human agents. Also, the removal of source materials are expected to eliminate significant metals loading and toxicity to surface water and sediment. Additionally, a new technology, —subaqueous disposal— may potentially demonstrate its degree of effectiveness in reducing contaminant toxicity and/or mobility, and will reduce the overall above-ground mine waste volume subject to long-term O&M. Also, encouraged pre- and concurrent remedy chat sales will reduce the volume of source material for remediation. Although the remedy does not employ treatment, this is consistent with prior large lead site remedies due to the large volume of mine waste dispersed over great areas.

The remedy is easily implemented. Not only does it utilize standard construction equipment but experience in executing all of the remedy components has been gained by employing them at other portions of the Site.

Modified Alternative 8A may have short-term impacts as it requires a long implementation time frame (8-10 years) and involves the excavation and/or consolidation and transportation/movement of large volumes of material (approximately seven million cubic yards – see Table 1). Recent (July 2006) volume estimates of commercially used chat at the Treece subsite indicate that approximately 1.3 million cubic yards have been removed to date. Implementation of subaqueous disposal may have short-term impacts due to the potential increase in groundwater concentrations of heavy metals. However, erosion and drainage controls used during the implementation are expected to minimize impacts associated with excavation and consolidation of surficial mine waste.

Considering the large size of OU-3 and OU-4, as well as the multi-media nature of the hazards, Modified Alternative 8A is favorable with regard to cost, with estimated capital and O&M costs of approximately $66 million. O&M costs will cover periodic oversight and maintenance of the above-ground caps as well as periodic groundwater monitoring in cases of subsidence disposal. The actual remedy cost may be lower than the projected cost depending on how much chat is sold commercially prior to implementation. A cost estimate has been attached to this document.

Modifying Criteria Evaluation

The two modifying criteria of community and state acceptance are intended to assess the views of both groups regarding the proposed cleanup approach. The state of Kansas is represented by the KDHE and the public is represented by the local affected community. Views of the state are well known since the KDHE has been involved in many aspects of the project to date. Community views are fairly well known based on interactions with local land owners, local government officials, and similar situations at nearby subsites of the Site that historically have been through a similar process.

Modified Alterantive 8A is expected to be acceptable to the public and is known to be acceptable to the state of Kansas. The public historically has expressed a desire for environmental remedies that address all surficial accumulations of mine waste which this remedy meets. Historically, local elected officials representing the cities of Baxter Springs and Treece have contacted the EPA expressing desire for the remediation of mine waste in these communities. Moreover, many local citizens from these areas have also contacted the EPA with similar input. Recently, citizens of Treece, Kansas, have expressed a strong interest to be relocated from this community based on the probability of similar actions being conducted across the state line in Oklahoma mostly due to possible underground mine collapse. However, as explained more fully in the Responsiveness Summary, the social and physical hazard aspects of citizen relocation are not subject to the EPA's environmental mandate. In summary, there is local support from citizens and government officials for the remediation of the remaining mine waste and there is a recent desire of citizens in Treece to be relocated. The state of Kansas has recently expressed a similar desire that all surficial mine waste be addressed and this preference is also met by the remedy. The KDHE has reviewed and concurred with this ROD Amendment.

L. PRINCIPLE THREAT WASTES

According to the Office of Solid Waste and Emergency Response's (OSWER) Directive 9380.3-06FS (A Guide to Principal Threat and Low Level Threat Wastes), "Principle threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur." Based on this definition, mine waste at the subsites does not appear to be principal threat waste. Overall, containment will be employed at this site due to the widespread nature of the contaminants, large volumes of materials, and effectiveness of

nontreatment technologies (excavation, consolidation, capping, revegetating, subaqueous disposal) for mine waste remediation. It should be noted that subaqueous mine waste disposal may constitute treatment if altered geochemical conditions are established. This aspect of the remedy will be assessed over time.

M. SUMMARY OF THE SELECTED ALTERNATIVE

The selected cleanup approach for addressing the mine waste at OU-3 and OU-4 is an updated version of Alternative 8A which is designated as Modified Alternative 8A (Complete Source Removal, Consolidation, Capping and On-Site Disposal). One modification to the original Alternative 8A includes commercial chat sales. Modified Alternative 8A addresses all mine waste accumulations and allows flexibility with regard to capping in-place, consolidation and capping, or subaqueous disposal. It is an engineering solution and requires the use of multi-layer (soil/clay), infiltration-preventing cap designs. Risks will be reduced in the most effective manner due to the above-mentioned flexibility, based on engineering efficiencies.

The cleanup levels for addressing contaminated soil, particularly soil underlying and surrounding chat and tailings, are based on the EPA-derived ecological PRGs and are 10 ppm cadmium, 400 ppm lead, and 1,100 ppm zinc. The derivation of these cleanup levels based on the ecological risk evaluation is included in the AR.

The cleanup levels for addressing surficial, nonresidential mine waste will be the same as those for contaminated, nonresidential soil, specifically: 10 ppm for cadmium, 400 ppm for lead, and 1,100 ppm for zinc. The EPA is applying the soil cleanup levels to the mine waste because it acts as a source to the soil. The wide body of historical site data/investigations and associated cleanups has shown that the mine waste accumulations present human health and ecological risks. Samples of select chat and tailings deposits representative of the mine waste were collected during the RI and indicated greatly elevated levels of the COCs. The minimum concentration of at least one COC in these samples was greater than the ecological soil cleanup levels previously proposed. It is expected that all the surficial mine waste will fail to meet the cleanup levels and will require remediation. The mine waste volumes, aerial extent, and locations historically have been clearly identified and mapped in the FS via aerial photography and fieldwork. The mine waste is generally distinctive from the surrounding and underlying soil due to different grain sizes and color and it is easily identifiable in the field.

Surface water cleanup levels for the subsites will be the KDHE Chronic Aquatic Life Criteria for cadmium, lead, and zinc. Sediment and surface water at the Baxter Springs subsite will be addressed under OU-2 (Spring River Basin). Sediment at the Treece subsite will be addressed after all mine waste cleanups have been conducted to remove source contamination to the sediment. It will be dealt with either as part of the Spring River Basin (OU-2) or separately. Air monitoring will not be conducted during remedial activities at OU-3 and OU-4. This determination is based on air monitoring results concurrent with previous excavation and capping remedial actions at OU-5 and OU-7 which did not indicate releases of COCs to the air.

The specific elements of preferred Modified Alternative 8A include the following components for the Baxter Springs and Treece subsites. Figures 2, 3, and 4 show the mine waste discussed below:

- Excavate, consolidate, and/or cap surficial mine waste. Mine waste in heavily forested, thickly vegetated areas will not be subject to excavating, consolidating, or capping. Whether to excavate, consolidate, or cap mine waste in-place will largely depend on actual field conditions and will be further detailed during the RD phase. In general, however, the EPA envisions that mine waste in three circumstances will be excavated and consolidated with other mine wastes. The first scenario involves mine waste that is small in size, either volumetrically or aerially. Removing this mine waste will free more land for unlimited use and unrestricted exposure as well as reduce O&M costs. Often, excavated chat piles or isolated tailings/chat piles will fall into this category. The second mine waste category for probable excavation and consolidation is outwash tailings which are in streams or drainages. Removing this mine waste will stop further contamination from the source material to stream sediment and surface water. The third probable scenario for mine waste excavation and consolidation is mine waste near streams. Removing this mine waste from the erosional reach of streams will prevent their further contamination. In general, it is anticipated that selective staging of the mine waste removal/capping will occur based on proximity to residences and suburban structures (e.g, baseball field), and encouragement of responsible chat sales.

- Chat accumulations or piles, and excavated chat area, footprints at the Baxter Springs subsite to be addressed include BC-1, BC-2, BC-4, BC-19, BC-20, BC-22, BC-23, BX-1 through BX-10, BX-12, BX-13, BX-15 through BX-20, BX-23, BX-24, BX-26 through BX-29, BX-30, and BX-32 through BX-41. Tailings (fine grained mine waste) at the Baxter Springs subsite covered by this remedy include BT-1, BT-2, BT-3, BT-4, BT-10, BT-11, BT-13, BT-19 through BT-25, and BT-27 through BT-30. Outwash tailings at the Baxter Springs subsite that will be addressed by this remedy include BOW-3 and BOW-4. English 0, a mixture of chat, tailings, and excavated chat within the Baxter Springs subsite, will also be remediated.

- Chat piles and excavated chat area footprints at the Treece subsite to be addressed include TC-2 through TC-4, TC-7, TC-9, TC-15, TC-16, TC-20, TC-21, TC-23, TC-27, TC-29, TC-37, TC-45, TX-2, TX-4, TX-5, TX-7, TX-10 through TX-12, TX-14, TX-16, TX-18, TX-20 through TX-25, TX-27, TX-29 through TX-33, TX-39, TX-40, TX-42 through TX-47, and TX-59. Tailings at the Treece subsite covered by this remedy include TT-1, TT-5, TT-6, TT-8, TT-10 through TT-14, TT-17 through TT-19, TT-21, TT-22, TT-22N, TT-24 through TT-26, TT-28 through TT-33, TT-35, TT-36, TT-38, TT-41, TT-42, TT-44, and TT-45. Outwash tailings at the Treece subsite that will be addressed by this remedy include TOW-1 through TOW-5.

- Encourage source reduction via responsible chat sales before and during remedy implementation. The EPA plans to meet with chat owners to discuss responsible chat sales and provide them with further information on chat sales. The EPA will also encourage

any state and local programs with authority to enforce appropriate BMPs to ensure environmentally protective chat sales. The EPA will also provide its February 2003 Mine Waste Fact Sheet to chat owners, which indicates acceptable and nonacceptable uses of mine waste.

- Potentially utilize subaqueous mine waste disposal and post-remedial action groundwater monitoring. However, subaqueous mine waste disposal will not be employed as a remedy near streams or floodplains.

- Cap subsidence pits, consolidation areas, tailings impoundments, and in-place chat/tailings areas utilizing topsoil and clay caps with a minimum total thickness of 1.5 feet. The use of other materials such as fly ash in conjunction with soil is acceptable pending a successful assessment of viability.

- Recontour and revegetate all disturbed areas and facilitate drainage and erosion controls. Construct sedimentation basins, detention ponds, dikes, berms, and swales to the extent necessary to control run-on and run-off.

- Conduct O&M after the source reduction activities which will include at least inspections of the soil/clay caps, select surface water monitoring in and downstream of the sedimentation basins, and, if deemed applicable, groundwater monitoring in areas of subaqueous disposal.

The following component is covered by the existing 1997 ROD; however, it has been updated with potential new approaches to achieve the goals:

- Adopt previously proposed institutional controls addressing the following elements: restrictions on new residential development in mine waste areas, restrictions on the drilling and installation of new domestic water supply wells, encouragement of local citizens to utilize existing water districts for domestic need, and the implementation of casing integrity standards and oversight for the design and construction of new deep aquifer supply wells. These county-wide institutional controls are included in other Site decision documents. New approaches include working with the state of Kansas to utilize state authorities in assisting with the implementation of institutional controls.

Based on the information currently available, the EPA and the KDHE believe the selected alternative meets the threshold criteria and provides the best balance of tradeoffs among historically suggested alternatives with respect to the balancing and modifying criteria. The EPA expects the selected alternative, Modified Alternative 8A, to satisfy the following statutory requirements of CERCLA section 121(b): (1) be protective of human health and the environment, (2) comply with ARARs (or justify a waiver), (3) be cost effective, (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and (5) satisfy the preference for treatment as a principal element or explain why the preference for treatment will not be met.

As the support agency, the KDHE has been consulted in the preparation of this ROD Amendment and has provided formal concurrence for the selected alternative in this ROD Amendment. The USFWS also supports the cleanup actions specified in this ROD Amendment.

An unknown aspect of the remedy is the permanence associated with subaqueous disposal of mine waste. In particular, metals could possibly be released from the mine waste to the shallow aquifer groundwater. The historical pilot study conducted at the Waco subsite has not conclusively demonstrated the expected geochemical modifications; however, monitoring is continuing and the literature supports the possibility of achieving geochemical changes (anaerobic conditions). Based on the uncertainties stemming from the pilot study at the Waco subsite, there is a possibility of future groundwater impacts. However, subaqueous mine waste disposal technology is considered an alternative treatment technology that may prove useful at many future projects. The potential environmental gains resulting from this alternate technology, coupled with the complete surface protectiveness and return of land to productive agricultural or residential use, has factored into the EPA's decision to study and potentially implement this technology on a remedial scale. While this relatively new technology is expected to be promising, it will not be used under certain hydrogeologic conditions such as locations exhibiting a very permeable groundwater system with large gradients, or near streams or floodplains. Given the long implementation time frame (8-10 years), the EPA expects to evaluate the viability and potential limits of subaqueous disposal during the RA.

N. STATUTORY DETERMINATIONS

The EPA's primary legal authority and responsibility at Superfund sites is to conduct response actions that achieve adequate protection of human health and the environment. Section 121 of CERCLA also establishes other statutory requirements and preferences that include the need for federal and state ARARs compliance for selected remedial actions in addition to cost effectiveness and the use of permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable. Additionally, the statute includes a preference for remedies that reduce the mobility, toxicity, and volume of contaminants and include treatment. The following sections discuss how the selected alternative meets these statutory requirements.

Protection of Human Health and the Environment

The selected remedy will protect human health and the environment by achieving the RAOs through engineering measures. The institutional controls components of existing site RODs will also complement the engineering controls specified by the selected alternative in terms of protecting human health.

Ecological risks resulting from exposure to mine waste, heavy-metals-impacted prey and food sources, and mining-impacted surface waters will be addressed by the excavation, consolidation, and capping of or subaqueous disposal of mine waste. Surficial mine waste will

no longer be present and thus will be unavailable for uptake by ecological receptors or to act as a source to other media. The ecological risks at OU-3 and OU-4 will be addressed by engineering controls as specified in the Summary of the Selected Alternative (above in Section M).

Human health risks resulting from the exposure to mine waste via the importation and use of the uncontrolled wastes in residential scenarios, trespassing in areas of mine waste accumulations, and residential construction in or near mine waste areas will be prevented by the physical relocation, consolidation, subaqueous disposal, and capping requirements under the selected alternative. Mine waste will no longer be present at the surface, and as such, the existing and potential human health risks will be eliminated by engineering controls. O&M requirements for the capped areas will also serve as controls on future use. The institutional control components of existing site RODs, when fully implemented, will limit or control residential development in or near mine waste areas and also control the drilling and use of new water supply wells in mined areas.

Potential groundwater risks to human health will be addressed by institutional controls also including, as mentioned previously, restrictions on the drilling and installation of new domestic water supply wells and the implementation of casing integrity standards and oversight for the design and construction of new deep aquifer supply wells. Additionally, the selected alternative's potential groundwater monitoring will assist in the evaluation of the effectiveness of subaqueous mine waste disposal.

Compliance with ARARs

In general, selected alternatives are expected to comply with ARARs unless waivers are granted. Under the 1997 ROD, a TI waiver was employed for the chemical-specific ARARs for the shallow aquifer groundwater and surface water. The TI waiver for the shallow aquifer groundwater is maintained by this ROD Amendment. However, the TI waiver for surface water at the Treece subsite is being removed as the EPA believes the selected alternative will meet chemical-specific ARARs for surface water as explained below. The selected alternative is expected to meet all additional chemical-, action-, and location-specific ARARs.

In general, chemical-specific ARARs provide health- or risk-based concentration limits for contaminants in various environmental media such as sediment, groundwater, and surface water. The chemical-specific ARARs for groundwater and surface water, and the risk-based criteria for surficial mine waste are discussed below:

- Safe Drinking Water Act (SDWA) – 42 United States Code (U.S.C.), National Primary Drinking Water Standards, Maximum Contaminant Levels (MCLs), 40 Code of Federal Regulations (CFR), Part 141; Technical Impracticability Waiver for Groundwater ARARs, Cherokee County Superfund Site, Region 7 Record of Decision for OU-3 and OU-4 of the Cherokee County Site, August 1997; Kansas Safe Drinking Water Act; and the Kansas Administrative Regulations (K.A.R.) 28-15-13 for Safe Drinking Water. MCLs are standards promulgated for the protection of public drinking water supplies and these levels, in addition to the Kansas standards, are relevant and appropriate cleanup goals.

The upper and lower aquifers at the site are and/or could be used for drinking water purposes. The following depicts the MCLs established by the SDWA and Kansas standards for lead and cadmium: lead action level at the tap = 15 parts per billion (ppb); cadmium MCL = 5 ppb. These are applicable, relevant, and appropriate requirements for this response action.

- Clean Water Act (CWA) – The CWA, 33 U.S.C., requires states to establish surface water quality standards that are protective of human health and the environment. Many streams in the subsites are classified under the Kansas Standards, K.A.R. 28-16-28b et seq., and are subject to these criteria. The Kansas Standards require that corrective actions be implemented to restore the designated uses of impaired surface waters as well as the return of original water conditions [K.A.R. 28-16-28(f)g]. These standards are applicable, relevant and appropriate requirements for this response action.

- Resource Conservation and Recovery Act (RCRA); Kansas Hazardous Waste Management Act (KSA 65-3430 et. seq., K.A.R 28-31-1 to 28-31) – The RCRA and Kansas Hazardous Waste Management Act set forth a number of standards for the identification and handling of mine wastes at the sites, and are, therefore applicable, relevant, and appropriate requirements for this response action.

In general, location-specific ARARs establish restrictions on permissible concentrations of contaminants or establish criteria for conducting actions in sensitive locations such as flood plains, wetlands, streams, and areas of critical habitat. The location-specific ARARs are discussed below:

- The Endangered Species Act (16 U.S.C., Section 1531, 50 CFR Part 200, 30 CFR Part 402) and the Kansas Non-game and Endangered Species Conservation Act, (KSA 32-501) – Due to the presence of several federal and state threatened and endangered species at the subsites, the Region intends to initiate the appropriate consultation processes. Threatened and endangered species, in addition to the habitat that supports these species, require protection and conservation. Moreover, consultation and coordination with the USFWS and the state of Kansas will facilitate compliance with these requirements.

- The Fish and Wildlife Coordination Act (16 U.S.C., 40 CFR); and Fish and Wildlife Conservation Act, 16 U.S.C Sections. 2901-2912 – Due to actions anticipated at the subsites which may affect the habitat of fish and wildlife, the Region intends to engage in the appropriate coordination process. Federal and state threatened and endangered species, in addition to critical habitat, are present at the OU-3 and OU-4 subsites. Coordination with the USFWS of the U.S. Department of the Interior, in addition to the state of Kansas, will facilitate compliance with this requirement.

- The National Historic Preservation Act (16 U.S.C.), and the regulation at 33 CFR Part 800 – These requirements specify that response actions consider historical properties eligible for or included on the National Register of Historic Places. Although unlikely, some historic mining properties or structures may be deemed eligible and appropriate for preservation. The Region intends to meet the requirements. The subsites are part of the historic TSMD that operated for over 100 years and is nationally and internationally known as a major lead-zinc field.

- The National Archeological and Historic Preservation Act (16 U.S.C., and 36 CFR Part 65) – These requirements specify the recovery and preservation of artifacts which may be discovered during implementation of response actions. Although unlikely, the OU-3 and OU-4 response action may uncover prehistoric, Native American, scientific, or archeological information subject to preservation. The Region intends to meet the requirements.

In general, the action-specific ARARs are based on activities and technologies to be implemented at the subsites. Examples include design, construction, and performance requirements related to conducting the response action. The action-specific ARARs are discussed below:

- The National Pollutant Discharge Elimination System, Effluent Limitations (40 CFR Parts 122, 125, and 440) – The regulation at 40 CFR, Part 440 sets technology-based effluent limitations for mine drainage from mining related point sources. The OU-3 and OU-4 response actions may temporarily generate effluent; thus, the above criteria are relevant and appropriate requirements for the implementation of the OU-3 and OU-4 remedy. However, the substantive requirements of these regulations are expected to be met through engineering controls during implementation of the remedy.

- The Surface Mining Control and Reclamation Act (30 U.S.C., 30 CFR Part 816, Sections 816.56, 816.97, 16.106, 816.111, 816.116, 816.133, and 816.150) – These relevant and appropriate requirements provide guidelines for the post-mining rehabilitation and reclamation of surface mines. These requirements are expected to be met by the implementation of the remedy. Coordination and consolidation with the U.S. Department of the Interior will assist in meeting these requirements.

- Clean Water Act (Section 404, 33 U.S.C., 40 CFR Part 230, and 231) – These requirements prohibit the discharge of dredged or fill materials into wetlands without a permit. The OU-3 and OU-4 remedy could include placing mine waste in water-filled features (pits, mine shafts, and collapses). The Region intends to meet the substantive aspects of these requirements in the implementation of the

remedy. The intent of the cleanup is to remove highly eroding wastes from the surface and place these materials in water-filled features below ground in an effort to prevent surface contact by human and ecological receptors as well as surface erosion to streams while attempting to establish anaerobic groundwater conditions that prohibit the migration of metals in the groundwater system.

- Rivers and Harbors Act (Section 10, 33 U.S.C.), and related regulations 33 CFR 320, and Section 404 of the CWA, 40 CFR, Part 125, subpart M – These requirements prohibit the disposal of dredge and fill materials into streams without a permit. The OU-3 and OU-4 remedy includes actions near excavation, consolidation, and disposal of mine waste. The Region intends to meet the substantive requirements of these criteria. The remedy does not include direct placement of material into streams but care must be taken while working near streams to ensure that materials do not wash into these features.

- CWA Water Act, Discharge of Storm Water, 40 CFR Section 122.21, 40 CFR Section 122.26 – These requirements address run-off generated from infiltration events and erosion by streams. The Region intends to meet the substantive requirements of these criteria by reducing water pollution resulting from run-off. The remedy will ultimately remove surficial mine waste materials available for erosion and the implementation of the remedy will be controlled to address run off or releases during construction.

To-be-Considered criteria (TBC) are nonpromulgated criteria, advisories, guidelines, and policies issued by federal or state agencies. TBCs are not ARARs, although they can be used to determine the necessary level of protection of human health or the environment. Examples include risk-based remediation levels such as PRGs. The TBCs are discussed below:

- SDWA, National Secondary Standards, 40 CFR Parts 141 and 143 (Secondary MCLs and MCGLs) – These TBCs are to be considered when implementing the remedy. Secondary MCLs and MCLGs are standards for public drinking water supplies that provide taste, odor, and aesthetic qualities.

- EPA Guidance Document, Cleanup Level for Lead in Groundwater (1/15/93) – This guidance to be considered recommends a final cleanup level of 15 ppb lead in groundwater used for drinking water purposes and is consistent with SDWA and Kansas criteria. Lead is a contaminant of concern at both subsites. Water districts at both subsites use groundwater from the lower aquifer for drinking water purposes. There is no known drinking water use of the upper aquifer within the subsites.

- Draft Soil Screening Guidance, OSWER Directive 9355.4-14FS, December 1994, EPA/540/R-94/101 and 106; Risk Management Derived Residential Yard Soils Remedial Action Levels for Lead and Cadmium, Region 7 Record of Decision for the Baxter Springs and Treece Subsites (OU-3 and OU-4) of the Cherokee County

Superfund Site, August 1997; Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, OSWER Directive No. 93555.4-12, July 14, 1994. Although no residential areas are anticipated in the cleanup, such areas may need remediation and, therefore, these guidelines are to be considered for this response action.

- As part of the process to designate uses of impaired surface waters, as well as the return of original water conditions, the state of Kansas has developed TMDLs for cadmium, lead, and zinc in Tar Creek at OU-4. Although Kansas has also determined TMDLs for the Spring River Basin, of which the Baxter Springs subsite is a part, these will be addressed under OU-2, as mentioned earlier.

- Site Specific Toxicity Reference Values for Aquatic Biota, Region 7 ROD for OU-3 and OU-4 of the Cherokee County Site, August 1997 – This requirement sets standards specific to the operable units, and is an applicable, relevant and appropriate requirement.

- Executive Order on Floodplain Management, Executive Order No. 11988, 40 CFR Sec. 6.302(b) and Appendix A – This is a legally applicable requirement for the response action given the presence of floodplains —especially the Spring River and Tar Creek floodplains— at OU-3 and OU-4. The executive order requires that actions avoid adverse effects and minimize harm to floodplains in addition to restoring and preserving the natural and beneficial values of floodplains to the extent possible. The OU-3 and OU-4 selected alternative is expected to comply with these requirements as the intent of the cleanup is to ultimately protect floodplains and streams by the removal of surficial mine waste.

- Executive Order 11990, Protection of Wetlands (40 CFR 6, Appendix A) – This order is a legally applicable requirement due the presence of wetlands at OU-3 and OU-4 and it specifies the avoidance, to the extent practicable, of adverse impacts associated with the loss or destruction of wetlands resulting from response activities. The selected alternative is expected to comply with this requirement.

Cost Effectiveness

Modified Alternative 8A (the selected alternative) estimated at approximately$ 66 million is a cost-effective permanent solution to mine waste impacting the Baxter Springs and Treece subsites of the Site. The remedy relies on conventional engineering methods that are easily implemented and is consistent with previous remedies at other subsites, OU-5 in particular. Since all surficial mine waste at both subsites is fully addressed, it is a permanent solution for all source material and impacted media except for shallow groundwater (waived) and sediment (future cleanup actions) and not subject to excessive future reopening costs or other potential future costs associated with toxic tort lawsuits. Additionally, the response action will return the areas to a more natural condition that may prove beneficial from a natural resource perspective. Other less comprehensive alternatives would leave a large amount of unremediated mine waste with such

potential problems as being subject to reopening provisions, future NRD claims and litigation, and potential toxic tort lawsuits. Additionally, the mine waste not subject to remediation would rely heavily on the institutional controls components of other RODs which have not been enacted to date. These alternatives would not meet ARARs and are not considered optimally protective. Finally, although the exact amount of land returned to unlimited use and unrestricted exposure cannot be quantified currently, after implementation of the selected alternative, a substantial amount of currently inaccessible land will meet this objective and increase the overall value of county land.

Modified Alternative 8A will achieve all RAOs, meet all ARARs, require no additional ARARs waivers, and may provide substantial future monetary gain or benefit by providing toxic tort relief. The remedy will also provide more suitable habitats for natural resources. Modified Alternative 8A is especially cost effective in consideration of the benefits derived in relation to reducing or eliminating future environmental or legal claims under other statutes or laws.

Utilization of Permanent Solutions and Alternate Treatment Technologies

As discussed previously, Modified Alternative 8A is a permanent solution that relies on typical engineering controls. However, the potential unknown aspect related to permanence is associated with the potential release of metals to groundwater resulting from subaqueous mine waste disposal. While the relatively new technology is expected to be promising, it is not applicable under certain hydrogeologic conditions. Coupled with the uncertainties stemming from the recently completed pilot study at the Waco subsite, there is a possibility of future groundwater impacts. However, the novel subaqueous mine waste disposal technology is considered an alternative treatment technology that may prove highly useful at many future projects. The potential environmental gains resulting from this alternate technology, coupled with the complete surface protectiveness and the return of farm land to productive agricultural use, has factored into the EPA's decision to implement this technology on a remedial scale.

Modified Alternative 8A has a high degree of permanence associated with the removal and capping of surficial mine waste and a potentially lesser degree of permanence, subject to potential monitoring of the groundwater component of the filled pits. Modified Alternative 8A utilizes an alternative treatment technology that may prove highly beneficial at future sites. The controlled implementation of a remedial scale project is desirable.

Preference for Treatment

The preference for treatment may or may not be satisfied by Modified Alternative 8A at the Baxter Springs and Treece subsites depending on their location and remedial solution used. At both subsites, the mine waste located in the floodplain of the Spring River or Tar Creek are not appropriate for subaqueous mine waste disposal technology. Thus, this mine waste will be excavated and disposed of outside the limits of these floodplains. The large volume of waste and potentially expensive methods to stabilize or treat mine waste will result in the preference for treatment not being met at this subsite due to technical infeasibility.

Subaqueous mine waste disposal methods at other portions of the subsites may satisfy the preference for treatment pending an analysis of groundwater conditions following disposal. The historical pilot study conducted at the Waco subsite has not demonstrated geochemical modifications that could be considered treatment to date; however, monitoring is continuing and the literature supports the possibility of achieving geochemical changes (anaerobic conditions) which could be considered a form of treatment. In summary, Modified Alternative 8A may not be capable of satisfying the preference for treatment at the subsites.

Reduction of Mobility, Toxicity, and Volume

Modified Alternative 8A will reduce the mobility and toxicity of the contaminants of concern; however, the volume of mine waste will not be reduced. Mine waste will be excavated, consolidated, disposed, and capped, thus decreasing the mobility and toxicity of these wastes.

Five-Year Review Requirements

The selected alternative is subject to periodic five-year reviews in accordance with Section 121(c) of CERCLA and the NCP. Although mine waste will be removed from the surface, and thus eliminated from potential uptake by human and ecological receptors, the wastes will remain at the site with elevated COC levels below the surface. Potential groundwater impacts stemming from subaqueous mine waste disposal will potentially require monitoring and assessment as part of the five-year review process. Moreover, the O&M requirements for integrity and monitoring of the capped areas will require assessment during the five-year review process in addition to the status of institutional controls that are woven throughout the county by prior RODs.

O. DOCUMENTATION OF CHANGES

No major changes were made to the ROD Amendment in response to input received during the public comment period following the release of the Proposed Plan.

FIGURES

TABLES

TABLE 1
Baxter Springs and Treece Subsites' Mine/Mill Waste Totals
Cherokee County Superfund Site
Cherokee County, Kansas

Mine Waste Type	Baxter Springs Subsite		Treece Subsite	
	Area (acres)	Volume (cubic yards)	Area (acres)	Volume (cubic yards)
Chat	36.45	246,542	66.7 [4]	996,173 [4]
Tailings	75.69	151,518	131.71	514,175
Excavated Chat and Mill Sites	232.05	1,123,122 [1]	577.72 [4]	3,728,220 [2]
Subsidence Pits	14.31	1,696,259	5.29	346,441
Outwash Areas	21.45	69,212 [3]	15.17	48,400 [3]

Notes:
These numbers come from two tables in the Feasibility Study entitled 'Table A-1: Baxter Springs Mine/Mill Waste Piles' and 'Table A-2: Treece Mine/Mill Waste Piles.'
The Baxter Springs numbers have been adjusted for the partial source reduction that was conducted under the ROD

[1] - The volume is unknown. Therefore, based on several depth samples from the Remedial Investigation (RI), it was estimated using the known acreage and an estimated thickness of three feet.

[2] - The volume is unknown. Therefore, based on several depth samples from the RI, it was estimated using the known acreage and an estimated thickness of four feet.

[3] - The volume is unknown. Therefore, based on several depth samples from the previous Remedial Action (RA), it was estimated using the known acreage and an estimated thickness of two feet.

[4] - A recent (July 2006) update of the chat volume in Treece indicates that approximately 1.3 million cubic yards have been commercially used. This estimate assumes that by the time of the RA, only chat bases will remain of the currently commercially sold chat piles and thus they are included in the excavated chat and mill sites estimate.

TABLE 2

REMEDIAL ACTION OBJECTIVES (RAOs)

Source Materials RAOs

1. Prevent human ingestion of contaminants of concern (COCs) (cadmium, lead and zinc) from source materials that would potentially result in cancer risks greater than 1.0EE-06, non-carcinogenic hazard indexes greater than 1, or blood lead levels causing unacceptable human health risks (10 micrograms per deciliter of blood for children). Source materials containing less than 800 parts per million (ppm) lead and less than 75 ppm cadmium are deemed acceptable for preventing these potential human health risks.

2. Prevent the ingestion exposure of biota to COCs (cadmium, lead and zinc) in source materials that would potentially result in excessive ecological risks. Source materials containing less than 10 ppm cadmium, 400 ppm lead, and 1,076 ppm zinc are deemed acceptable for these potential ecological risks.

Soil RAOs

1. Prevent human ingestion of COCs (cadmium, lead and zinc) from soils that would potentially result in cancer risks greater than 1.0EE-06, non-carcinogenic hazard indexes greater than 1, or blood lead levels causing unacceptable human health risks (10 micrograms per deciliter of blood for children). Soils containing less than 800 parts per million (ppm) lead and less than 75 ppm cadmium are deemed acceptable for preventing these potential human health risks.

2. Prevent the ingestion exposure of biota to COCs (cadmium, lead and zinc) in soils that would potentially result in excessive ecological risks. Soils containing less than 10 ppm cadmium, 400 ppm lead, and 1,076 ppm zinc are deemed acceptable for these potential ecological risks.

Surface Water RAOs

1. Prevent ingestion and dermal exposure of biota to surface waters exceeding Kansas Aquatic Chronic Life Criteria, resulting from the release and transport of COCs (cadmium, lead, and zinc) from source materials (mine wastes) and non-residential soils within the subsites. The Kansas Chronic Aquatic Life Criteria for each of the three metals is calculated from an equation included in the Tar Creek Total Maximum Daily Load (TMDL) and is hardness dependent.

2. Prevent ingestion and dermal exposure to aquatic biota of COCs (cadmium, lead and zinc) by controlling the erosion and transport of mine wastes to surface water.

TABLE 3

COMPARISON OF ACTIONS UNDER THE 1997 RECORD OF DECISION (ROD) AND 2006 ROD AMENDMENT

1997 ROD	2006 ROD Amendment
1. Remediate a portion of the surficial mine wastes at Baxter Springs: chat piles and excavated chat areas BC-12, BX-11, BX-29, and BX-31; fine grained tailings BT-1 (SEC 3), BT-2 (SEC 2), BT-4, BT-6, BT-7, BT-8, and BT-9; and outwash tailings BOW-1 and BOW-2 (wastes shown on Figure 4)	1. Remediate remaining wastes at the Baxter Springs subsite: chat piles or excavated chat areas BC-1, BC-2, BC-4, BC-19, BC-20, BC-22, BC-23, BX-1 through BX-10, BX-12, BX-13, BX-15 through BX-20, BX-23, BX-24, BX-26 through BX-29, BX-30, and BX-32 through BX-41; fine grained tailings BT-1, BT-2, BT-3, BT-4, BT-10, BT-11, BT-13, BT-19 through BT-25, and BT-27 through BT-30; outwash tailings BOW-3 and BOW-4; and 'English 0', a mixture of chat, tailings, and excavated chat
2. Did not address surficial mine wastes/sediments at Treece subsite	2. Remediate all surficial mine wastes at the Treece subsite: TC-2 through TC-4, TC-7, TC-9, TC-15, TC-16, TC-20, TC-21, TC-23, TC-27, TC-29, TC-37, TC-45, TX-2, TX-4, TX-5, TX-7, TX-10 through TX-12, TX-14, TX-16, TX-18, TX-20 through TX-25, TX-27, TX-29 through TX-33, TX-39, TX-40, TX-42 through TX-46, and TX-59; tailings TT-1, TT-5, TT-6, TT-8, TT-10 through TT-14, TT-14, TT-17 through TT-19, TT-21, TT-22, TT-22N, TT-24 through TT-26, TT-28 through TT-33, TT-35, TT-36, TT-38, TT-41, TT-42, TT-44, and TT-45; and outwash tailings TOW-1 through TOW-5.
3. Remediate all impacted residential properties at the Baxter Springs and Treece subsites	3. No new action, one follow-up property identified and remediated
4. Implement institutional controls	4. Continue to seek institutional control adoption and add State of Kansas controls to augment existing approach

TABLE 4

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Safe Drinking Water Act (SDWA) - 42 United States Code (U.S.C.), National Primary Drinking Water Standards, Maximum Contaminant Levels (MCLs), 40 Code of Federal Regulations (CFR), Part 141.

Kansas Safe Drinking Water Act

Kansas Administrative Regulations (K.A.R.) 28-15-13 for Safe Drinking Water.

Clean Water Act (CWA), 33 U.S.C.

Kansas Clean Water Law, Water Quality Standards, KSA 65-170 et. seq., K.A.R 28-16-28 et. seq.

Resource Conservation and Recovery Act (RCRA)

Kansas Hazardous Waste Management Act, KSA 65-3430 et. seq., K.A.R 28-31-1 to 28-31.

The Endangered Species Act, 16 U.S.C., Section 1531, 50 CFR Part 200, 30 CRF Part 402.

Kansas Non-game and Endangered Species Conservation Act, KSA 32-501.

Fish and Wildlife Coordination Act, 16 USC Secs. 661-665, 40 CFR Sec. 6.302(g).

Fish and Wildlife Conservation Act, 16 USC Secs. 2901-2912.

National Historic Preservation Act (16 U.S.C.), and the regulation at 33 CFR Part 800.

National Archeological and Historic Preservation Act (16 U.S.C., and 36 CFR Part 65).

The National Pollutant Discharge Elimination System, Effluent Limitations, 40 CFR parts 122, 125, and 440.

The Surface Mining Control and Reclamation Act (30 U.S.C., 30 CFR Part 816, Sections 816.56, 816.97, 16.106, 816.111, 816.116, 816.133, and 816.150).

Clean Water Act (Section 404, 33 U.S.C., 40 CFR Part 230, and 231).

Rivers and Harbors Act (Section 10, 33 U.S.C.), and related regulations 33 CFR 320, and Section 404 of the CWA, 40 CFR, Part 125, subpart M.

CWA Water Act, Discharge of Storm Water, 40 CFR Sec. 122.21, 40 CFR Sec. 122.26.

TO BE CONSIDERED CRITERIA

Federal Safe Drinking Water Act, National Primary and Secondary Standards, 40 CFR Parts 141 and 143 (Secondary MCLs and MCGLs).

EPA Guidance Document, Cleanup Level for Lead in Groundwater (1/15/93).

Draft Soil Screening Guidance, OSWER Directive 9355.4-14FS, December, 1994, EPA/540/R-94/101 and 106.

Risk Management Derived Residential Yard soils Remedial Action Levels for Lead and Cadmium, EPA Region 7 Record of Decision for the Baxter Springs and Treece Subsites (OU-3 and OU-4) of the Cherokee County Superfund Site, August, 1997.

Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, OSWER Directive No. 93555.4-12, July 14, 1994.

Kansas Clean Water Law, TMDL Regulations.

Site Specific Toxicity Reference Values for Aquatic Biota, EPA, Region 7 Record of Decision for OU-3 and OU-4 of the Cherokee County Site, August, 1997.

Executive Order on Floodplain Management, Executive Order No. 11988, 40 CFR Sec. 6.302(b) and Appendix A.

Executive Order on Protection of Wetlands, Executive Order No. 11990, 40 CFR Sec. 6.302(a) and Appendix A.

* This table is inclusive of guidance and to be considered (TBC) criteria. The Feasibility Study document within the Administrative Record File contains more information.

APPENDIX A

RESPONSIVENESS SUMMARY FOR THE RECORD OF DECISION
Baxter Springs and Treece Subsites (OU-3 and OU-4)
Cherokee County Superfund Site
Cherokee County, Kansas

Herein follows the responsiveness summary for the Record of Decision (ROD) Amendment for the Baxter Springs and Treece subsites of the Cherokee County Superfund Site (Site) by the Environmental Protection Agency (EPA). The responsiveness summary consists of the following three components: an overview of the public process, responses to verbal questions received at the public meeting, and responses to written correspondence received during the public comment period. This document is provided to accompany the ROD Amendment and reflects input resulting from the Proposed Plan and public comment processes.

Overview

The Proposed Plan and supporting documents included in the Administrative Record (AR) were made available for public review and comment for 30 days from July 24 to August 22, 2006. The potentially responsible party group includes the following companies: Gold Fields American Corporation, Blue Tee Corporation, Asarco, Inc., and St. Joe Minerals Corporation (corporate successor is currently The Doe Run Co.). A public meeting was held in Baxter Springs, Kansas, on August 10, 2006, with over 60 people in attendance. The transcript from the public meeting has been added to the AR.

Three letters were received during the 30-day public comment period from the following people: two from a citizen of Baxter Springs and one from a local landowner. In general, the two letters from the Baxter Springs' citizen questioned various aspects of the Proposed Plan, supported a residential buyout in Treece, and concluded that the cleanup plan was illogical. The local landowner letter contained eight comments relating to chat use, future land use of remediated areas, filling mine shafts, and scheduling of construction. The letters received during the public comment period have been added to the AR.

Responses to Verbal Comments

Several questions were asked at the public meeting following the formal presentation component of the meeting. Since each individual may have asked multiple questions, the questions and associated responses are grouped for the individual posing the question. This summary provides generalized designations or affiliations for individuals asking questions. The detailed transcript of the public meeting has been added to the AR for the Site.

Questions from a Resident of Treece – A resident heading the buyout initiative in the Treece area indicated that she would prefer that local buyouts of the residents happen first and then the EPA came in afterward to clean up the mine waste. She suggested that the EPA's selected remedy may be different if the residents were relocated prior to the cleanup as opposed to during or after the cleanup. Additionally, the resident questioned what was different about this cleanup and previous cleanups as well as the current timing of the cleanup. In particular, the resident questioned how much of the previous mine waste cleanup in Galena was in areas with no nearby residences.

Responses to the Resident of Treece – The remedy proposed by Region 7 addresses mine waste chat piles. Residential yards have already been cleaned up in previous actions. The EPA Superfund program cannot initiate residential buyouts in the Treece area or influence its potential timing based on a physical hazard such as subsidence into mine workings. The EPA's Superfund mission is to respond to impacts to human health and the environment due to hazardous substances, pollutants, or contaminants, which does not include physical hazards or social or economic issues. The residential buyout efforts in the Pitcher, Okalahoma, area were administered by the state and Region 6, but the Superfund program did not provide funding for the buyouts. Additionally, the previous mine waste cleanups in the Galena and Baxter Springs areas, as well as other lead sites in Region 7, did not require any residential relocation even though some of the mine waste was near residences and businesses. Furthermore, the mine waste presents a risk to ecological receptors and the natural environment such as animals, surface water bodies, etc., as well as future residents who may construct homes on the mine waste, not current residents. Therefore, based on this risk, the mine waste cleanup is needed whether or not residents are living in the mine waste areas and the selected remedy would not change even if current residents were relocated.

Regarding the timing of the mine waste cleanup actions for Baxter Springs and Treece, the remedy is being proposed now for several reasons. First, EPA (Region 6) and the state of Oklahoma are in the final stages of finishing a Remedial Investigation/Feasibility Study (RI/FS) and risk assessments for the mine waste operable unit of the Tar Creek Superfund Site in Oklahoma. That site is adjacent and downstream of the Treece subsite. The RI/FS and risk assessments determine how widespread the contamination is at a site, what the risk is from the contamination to humans and the environment, and what options there are for addressing the contamination. Following the remedy selection process outlined in the National Contingency Plan (NCP), it is expected that in the future, Region 6 will issue a Proposed Plan to address the Tar Creek Superfund Site mine waste and request public comment. The mine waste in both states heavily contaminates the south-flowing Tar Creek which continues to fail surface water standards in both Kansas and Oklahoma. Since Tar Creek is first contaminated with heavy metals from mine waste in Cherokee County before flowing into Oklahoma, Region 7 and the state of Kansas need to clean up the Cherokee County mine waste affecting Tar Creek before Region 6 addresses the possible mine waste cleanup in Oklahoma. This would maximize the reduction in heavy metal contamination to Tar Creek and be cost effective. Second, additional studies, observations, risk calculations, and information have been collected and published which

together indicate that mine waste contamination is a greater problem for the environment than historically was suspected. This recent information, as well as the ecological risk, are also driving the selection of a remedy in the ROD Amendment at this time. Finally, the construction of several new residences on existing mine waste with elevated levels of heavy metals has resulted in elevated blood lead levels in several children and the need for additional residential yard cleanups. In order to effectively prevent more construction on mine waste in the future, the EPA has decided to address this environmental issue now. Since the reasons behind the remedy selection for the mine waste cleanup are not based on the residents in either town being at risk (with the exception of future possible residents), the remedy to address the mine waste would not change regardless of the presence or absence of residents.

Overall, this mine waste cleanup will be very similar to those historically conducted in the Galena and Baxter Springs areas, although this ROD Amendment leaves no mine waste at the surface in the Baxter Springs area as opposed to the 1997 ROD. Additionally, the clay/soil cap in this ROD Amendment will be thicker than that used in the Galena area. This is due to lessons learned regarding the erosion of the cap in certain locations in Galena. Also, the disposing of mine waste into mine shafts and pits (subaqueous disposal) was not previously used in the Galena or Baxter Springs areas. This disposal method will also be used in some areas in Waco, Crestline, and Lawton. Finally, there is the opportunity for private chat owners to sell their chat before the EPA cleans up the mine waste on their property. This ultimately decreases the amount of mine waste the EPA will have to clean up while allowing the landowner to dispose of chat in an environmentally safe manner.

Questions from a Member of the Kansas House of Representatives – An elected state representative asked what could the Ballard property, which has mine waste buried under a clay/soil cap and specially-developed vegetation, be used for. A more general question asked by the state representative was how land with capped mine waste could be reused. Additionally, the state representative asked what mine discharge was, specifically regarding some monitoring data on mine discharge versus chat leachate on a graph shown during the presentation.

Responses to the State Representative – Region 7 has not specifically looked at reuse possibilities for the Ballard property or property that will have mine waste buried on it in the future. This issue is something Region 7 would like to discuss and determine at a future date with local officials and other public input. However, although some amount of light reuse may be possible, it is critical that the clay/soil cap and vegetation be maintained to reduce the exposure of humans and the environment (animals, plants, streams, sediment, etc.) to the heavy metals in mine waste. Activities such as building construction (residential or nonresidential) and farming would not be possible since the clay/soil cap would be greatly disturbed or possibly destroyed. Large accumulations of mine waste will be greatly consolidated before capping and many pits and collapse features filled with wastes. The filled pits, shafts, and collapses, as well as capped areas of mine waste, would not be desirable for farming. However, these actions will reduce the footprint of the mine waste and return a sizeable amount of land back for any use. In summary, more land will be available for any use as a result of the mine waste cleanup.

Mine discharge, as shown on the United States Geological Survey (USGS) graph during the public meeting presentation, is water that is discharging from unplugged mine shafts, vent holes, seeps, and abandoned mine dewatering wells. This water generally has elevated levels of heavy metals. The USGS study which was referenced during the public meeting determined how much of the metals in Tar Creek in Oklahoma might come from water seeping through the chat (chat leachate) into the stream versus how much might come from mine discharge. Overall, the study found that cadmium and lead loading was greater from chat leachate than mine discharge, while zinc loading was comparable between the two sources.

Question from a Treece Landowner – The landowner wanted to know details of the future buyout such as possible stockpiling of mine waste on his land in Treece and whether or not only his residence or his entire land would be part of the buyout. Additionally, the landowner wanted to know if there had been any physical verification, such as test wells, of the mine maps.

Response to the Treece Landowner – As indicated by the response to the first question by the Treece resident, Region 7 cannot conduct residential buyouts based on physical hazards or social or economic issues. Therefore, Region 7 cannot comment on who will be bought out or what land the buyouts might address. Regarding verification of the mine maps, Region 7 has not conducted any testing to determine the accuracy of the mine maps, nor is Region 7 aware of any testing being conducted to determine their accuracy. It should be noted, however, that the Army Corp of Engineers' report published in January 2006 on the risk of subsidence in Picher, Oklahoma, and nearby areas did not include any determination of how accurate the mine maps were by drilling or any other method. No subsurface explorations were conducted for that report and the mine maps were used at face value with the assumption that the maps may not be entirely accurate.

Question from a Treece Landowner – A landowner asked if and how Region 7 would take into account surrounding growing crops when filling and/or stabilizing mine shafts located in a field. The landowner also asked what cleanup actions are being taken by Region 7 in adjacent Missouri counties affected by mine waste.

Responses to the Treece Landowner – Region 7 and its state counterpart will definitely work around a farmer's crops when a mine shaft needs to be stabilized and/or filled and when capping and/or consolidation of mine waste as part of this remedy. At this time, the exact details of how Region 7 and the state will address this issue are not available and may be different for different properties based on their characteristics. Some general possibilities could include plugging mine shafts prior to the planting of crops or after their harvest, or defining a narrow track for construction equipment and personnel to use when coming to and leaving the mine shaft to minimize disturbing crops. In the past, Region 7 has encountered and met this particular challenge.

Regarding mine waste cleanups in Missouri, Region 7 has issued a ROD for addressing the mine waste in Jasper County. The ROD for Jasper County selected essentially the same remedy as the one in this ROD Amendment. As a result of the Jasper County ROD being issued earlier (2004) than this ROD Amendment, the technical basis for the two selected remedies are not exactly the same but the overall remedies are very similar.

Question from a Baxter Springs Resident – A resident asked what the difference was between the mine-related wastes discharging to the river and the releases to the river by companies such as Alcoa and ConAgra.

Response to the Baxter Springs Resident – In general, companies discharging to surface water bodies have permits specifying the chemicals or wastes and the amount they can discharge. These permits are issued by either the state or the EPA and inspectors are routinely sent out by the regulating agency to ensure that the terms of the permit are being followed and human health and the environment are protected. In instances of illegal dumping to surface water bodies, the EPA highly encourages contacting the agency so that it can send an inspector to the site of the dumping and investigate whether or not the company is following the correct procedures.

Question by a Baxter Springs Resident – The resident wondered if the "gravel," probably chat, and two sinkholes south of the remediated Ballard pile would be addressed under the ROD Amendment.

Response to the Baxter Springs Resident – Regarding the chat, Region 7 will deal with remaining chat and other mine waste around the Ballard pile and throughout the Baxter Springs and Treece areas. The ROD Amendment is intended to address all the mine waste remaining at the surface in the Baxter Springs and Treece areas. Regarding the sinkholes, the state of Kansas has a program to address sinkholes and mine shaft issues on a limited basis. If you are aware of any sinkholes, mine shafts, or mine collapses, please report them to the Surface Mining Section of the Kansas Department of Health and the Environment (KDHE) located in Frontenac, Kansas or call (620) 231-8540. This office maintains a list of sinkholes and mine shafts for stabilization and filling.

Question by a County Landowner – The landowner asked about the time frame that problems or issues not included in the ROD Amendment would be dealt with, specifically with regard to the five-year time frame associated with Five-Year Reviews that would occur after the completion of the remedial action.

Response to the County Landowner – Five-Year Reviews will be required at these subsites since the capped mine waste will not allow for unlimited use and unrestricted exposure at these locations as well as the contaminated shallow groundwater in these parts of Cherokee County. Five years is the maximum amount of time allowable between these reviews. However, if something related to the mine waste cleanup was missed in the ROD Amendment, Region 7 can address it sooner than five years if required.

Question by a Baxter Springs Resident – The resident questioned how the cleanup would address mine waste immediately adjacent to Treece but on the Oklahoma side of the state line. Additionally, the resident asked about some contamination noted on her monthly water bill by the city.

Response to the Baxter Springs Resident – Although the state of Oklahoma is not within the jurisdiction of Region 7, the two EPA regional offices have been in contact regarding this issue. In the future, Region 6 is expected to issue a Proposed Plan for a ROD for the mine waste at the Tar Creek Superfund Site for public comment. While the Region 6 Tar Creek remedy may not be exactly the same as the Cherokee County remedy, the two remedies should be similar for similar conditions.

Regarding the contamination in the monthly water bill, the EPA and state investigated this comment. It was determined that there is a notice that goes out to the Baxter Springs residents to let them know the water is in violation of the Maximum Contaminant Level (MCL) for trihalomethanes (THMs). The THMs are the result of chlorinating the water. The water tests have shown concentrations of THMs as high as 120 micrograms per liter (ug/l) and the standard is 80 ug/l. The Bureau of Water at the state has sent the city of Baxter Springs an order to upgrade their system. The city is trying to comply and has already completed one project to help the situation.

Question by a Treece Resident – The resident questioned if the dust coming off the chat on the local unpaved county roads was going to be addressed. She also indicated that the potential silicosis effects from using limestone on the unpaved county roads and driveways seemed to negate any health benefits derived from using a gravel material other than chat.

Response to the Treece Resident – Region 7 worked with the county commissioners historically and, as a result, there is a ban on using chat as gravel on the unpaved county roads. For several years, the county has used limestone gravel on the county roads. Although the chat previously laid down on the county roads was still there, observations by Region 7 showed that the chat was being buried underneath the limestone gravel, thus minimizing the amount of dust from pulverized chat when driving on the county roads. Since the county has addressed Region 7's concerns about using chat on the county roads, Region 7 cannot force the county to pave all the unpaved county roads. Additionally, air studies were conducted during the remedial actions in Galena and Baxter Springs. Air monitors accompanied construction workers as they were involved in the mine waste cleanups at the two subsites. This was considered a worst-case scenario by Region 7 with regard to inhalation of contaminated dust since construction equipment was actively moving mine waste and potentially creating contaminated dust. The air studies did not indicate a risk by metal-laden dust to human health at either subsite. Therefore, the EPA does not expect there to be a risk to people from the metals when breathing dust from unpaved county roads. Potential silicosis from crushed limestone is not a release or threat of release of a hazardous substance and therefore the EPA has limited ability to address the problem using Superfund authority. It should also be noted that crushed limestone does not present the same environmental hazard that chat presents to human health or the environment.

Question by a Treece Resident – The resident questioned why the EPA restricted the use of chat on unpaved roads but allowed chat to remain in piles around the towns, in particular, around his residence where vehicles kicked up dust. Additionally, he asked when the EPA would start the remedial action discussed in the ROD Amendment.

Response to the Treece Resident – With this ROD Amendment, Region 7 intends to address all the remaining surficial mine waste in the Baxter Springs and Treece areas. Therefore, by removing, consolidating, subaqueously disposing, and/or burying the remaining mine waste, Region 7 will address the issue of dust potentially coming off of chat piles. However, as indicated earlier in response to several questions, the selected remedy is not driven by risk to current residents which was addressed by the residential yard cleanup. Additionally, as indicated in the previous response, Region 7 has determined that dust from mine waste has not resulted in the recontamination of any previously remediated residential properties. In response to the resident's second question, Region 7 expects to begin implementing the remedy late next year or early the following year.

Responses to Written Correspondence

Two letters from a Baxter Springs citizen – The first letter contains comments on unpaved chat parking lots and county roads, alkaline groundwater flowing into the Spring River, and the plan to cap chat piles. The comments are paraphrased below and EPA's responses are identified.

The first comment questions why a plan similar to Ottawa County, Oklahoma, where approximately 2 million dollars was spent for asphalting county roads could not be implemented to deal with the chat roads in Cherokee County and use chat in the asphalt.

Response: Region 7 does not agree that the chat roads need to be remediated. As indicated earlier in a response to a Treece resident, this is based on the county's historical ban on using chat as gravel on unpaved county roads and air studies conducted during previous mine waste remedial actions. Therefore, Region 7 cannot expend funds on paving roads with chat-containing asphalt when it does not consider the unpaved roads a human health or environmental hazard from the chat. However, Region 7 does support other entities in the environmentally proper use of chat such as encapsulation in asphalt, as indicated in its February 2003 fact sheet on mine waste (attached). Regarding the road paving in Ottawa County specifically described in the letter, it was conducted for one of two historical reasons: (1) paving paid for by Region 7 for damage to county roads by trucks during a 2001 remedial action or (2) paving of approximately 20 miles of roads as part of the Oklahoma Plan for Tar Creek. The funding for the road paving done under the state's plan was secured by the United States Congress and the state. Ottawa County contracted out the paving locally.

The second comment indicates that alkaline water emerging from the ground and running into Spring River at a specific property should be addressed.

Response: The EPA is unaware of the situation referenced secondly in the letter, specifically, alkaline water flowing out of the ground into the Spring River at a Baxter Springs property. In order to potentially address this water, the EPA will contact the author to get more details.

The third comment indicates that if chat lots around Baxter Springs were asphalted, the city's storm drain system would not have the capacity to handle the additional water and requested assistance expanding this system.

Response: Chat lots are similar to chat roads inasmuch as there is a small volume of chat spread over a large area. As indicated in the first comment and a previous response to a Treece resident, the EPA does not consider chat lots a human health risk, especially when compared to the future potential resident and ecological risk associated with large chat piles and tailings impoundments. Therefore, the EPA has no plans to pave chat parking lots at the subsites. While runoff from chat lots may contribute to the metals contamination in the Spring River due to storm drainage, it is most likely minimal when compared to the metals-laden runoff and drainage from large chat piles and tailings impoundments affecting the river and its tributaries. The various potential contributions will be more thoroughly investigated and quantified when the EPA studies the Spring River Basin which began in late spring of 2006 and will take several years to complete.

The fourth and final comment indicates that this Baxter Springs citizen feels that covering chat piles is unacceptable. He suggested that the chat must be removed before remediation and mine shafts capped.

Response: The EPA believes the most responsible way to address the mine waste is the selected remedy in the ROD Amendment, namely, the removal, consolidation, subaqueous disposal, and/or capping of the mine waste. Based on the ecological and future residential risk, the selected remedy is protective of human health and the environment, is cost effective, and utilizes engineering solutions. The selected remedy also allows for commercial chat sales, addresses all surficial mine waste, and allows flexibility with regard to capping in place, consolidation and capping, or subaqueous disposal. To date, there are no treatment methods for the heavy metal-contaminated mine waste. Initially, other possible options for addressing the mine waste were investigated but were all found to be prohibitively expensive. Additionally, the large mine waste volume prohibits complete removal of the mine waste since there is no landfill that would or could accept nearly seven million cubic yards of a hazardous substance, nor would any local community be likely to accept the transfer of such wastes into their community. Therefore, the EPA has determined that the selected remedy will best address the remaining surficial mine waste at the subsites. Regarding capping the mine shafts, as indicated earlier, the state has undertaken this and caps a select number of mine shafts based on the available funding. A hazard evaluation relative to the other known mine shafts or collapse features related to the historical mining is used to set priorities.

The second letter by the Baxter Springs citizen alleges that the Proposed Plan was not logical as well, as a waste of money, and that the plan mirrors previous plans for the Tar Creek Superfund Site in Oklahoma which he claims "did not fix the problem." He suggests several points to consider regarding the Proposed Plan and encourages the different regions to coordinate their work. The comments are paraphrased below and Region 7's responses are identified.

The first comment indicates that the Baxter Springs citizen feels the Proposed Plan is illogical.

Response: First, for reasons previously documented, Region 7 disagrees that the Proposed Plan is not logical. In addition to previous reasons, given the large mine waste volume (approximately 6.8 million cubic yards) and the cost (approximately $66 million), the cost to address one cubic yard is less than $10. In the case of the Baxter Springs and Treece areas, Region 7 has determined and documented that the risk to ecological receptors, due to exposure to heavy metals in mine waste, and future potential residents who might move onto existing mine waste, is unacceptable. Therefore, Region 7 must address these risks in the best possible way. Given the various criteria Region 7 must use to weigh and balance when selecting remedies according to the NCP, Region 7 has determined that the selected remedy best addresses the risk due to mine waste. This decision is also based on previous successful mine waste cleanups at other parts of the Site, namely those done in the Galena area and the Baxter Springs area. The cap stability issues at the Galena subsite has been addressed in this ROD Amendment by using a thicker cap. In all other ways, the Galena and Baxter Springs remedial actions addressing the mine waste, specifically removing, consolidating, and/or capping, has proved successful in minimizing risk to ecological receptors and future residents.

The second comment claims that the Proposed Plan mirrors the plan used by Region 6 at the adjacent Tar Creek Superfund Site in Oklahoma

Response: Currently, Region 6 has not released a Proposed Plan for a preferred remedy for the mine waste at the Tar Creek Superfund Site. Therefore, the Region 7 selected remedy cannot mirror the Region 6 preferred remedy since one does not exist for the mine waste at the Tar Creek Superfund Site. Additionally, the approximately 150 million dollars spent to date at the Tar Creek Superfund Site has addressed problems other than the mine waste including: well plugging to eliminate groundwater pathways from the contaminated upper aquifer to the pristine lower aquifer, construction of several dikes and diversion channels to reduce acid mine drainage discharge to Tar Creek from abandoned mines; the cleanup of metals-contaminated residential properties posing risks to the residents, and the cleanup of abandoned mining chemicals at a mining office complex. Region 6 is in the final stages of the study phase for the mine waste cleanup at the Tar Creek Superfund Site and will be issuing a Proposed Plan describing the preferred alternative for the mine waste cleanup for public comment. Region 7 has been coordinating closely with its counterparts in Region 6 on common aspects of respective mine waste actions.

The third comment suggests that the EPA relocate Treece residents either due to the presence of chat or subsidence risk.

Response: As indicated earlier in the response to a Treece resident, as the CERCLA law stands, the EPA's authority is limited and cannot perform or fund a residential buyout in Treece or anywhere for reasons solely related to physical hazard presented by mine collapse or economic hardship resulting from the buyout of nearby Picher, Oklahoma. Regarding the continued hazard presented to the local population from the chat and other mine waste, the EPA has already addressed the risk to the population by performing residential yard cleanups in the Baxter Springs and Treece areas. A total of 441 properties were sampled and 46 yards were remediated at the Baxter Springs subsite. At the Treece subsite, a total of 148 properties were tested and 41 yards were remediated. Residential yard cleanups were finished in 2000. As proof of the effectiveness of residential yard cleanups in eliminating the heavy metal risk to human health, a follow-up blood lead study was conducted by the KDHE, the local Cherokee County Health Department, and the Agency of Toxic Substances and Disease Registry (ATSDR) in the community of Galena where over 700 residential properties were remediated. The study found that the geometric mean of blood lead levels in Galena children under six years of age decreased from 4.13 ug/dl to 2.29 ug/dl following the residential cleanup (44.6% reduction). The overall United States geometric mean of blood lead levels in children under six years of age in 1999 to 2000 was 2.2 ug/dl. Therefore, Region 7 believes it has reduced the risk to the local population from mine waste to an acceptable level. As stated earlier, the risk responsible for driving the current ROD Amendment is ecological risk (i.e., animals, plants, streams, etc.) and future residential risk, not current human health risk.

The fourth comment suggests that the EPA mandate chat use in regional federal and state projects using concrete or asphalt by providing incentives or transportation assistance. The Baxter Springs resident also thinks that capping the chat is unacceptable since the landowner cannot use the land with capped mine waste on it.

Response: While the EPA cannot mandate that other federal and state agencies use chat in asphalt in federal and state projects, it can and has encouraged other federal and state agencies to do so. Specifically, Region 7 and KDHE have engaged in conversations with the Kansas Department of Transportation about using chat in state road projects. Additionally, Representative Gatewood at the public meeting held in Baxter Springs in August stated that he would like to propose a bill in the state House of Representatives mandating a certain percentage of chat be used on highway projects throughout Kansas. Overall, Region 7 has pursued several options to encourage commercial chat sales. It should be noted, however, that not all the mine waste is commercially viable or usable in concrete or asphalt. As for leaving the landowner with no land they can use after the remedial action, Region 7 also finds this to be untrue. While the large volume of mine waste present at the two subsites means some mine waste will be consolidated and left in place with minimal land reuse options, a substantial amount of the land will be returned to unlimited use and unrestricted exposure, allowing the landowner to use the land in any manner he sees fit.

The fifth comment recommends that EPA Regions 6 and 7 and other government officials work together to address the common problems in the area.

Response: The EPA agrees that Regions 6 and 7 as well as the states, should work more closely together. Region 7 believes that the two Regions' approaches to cleaning up the Tri-State Mining District sites have been consistent. As an example, both Regions have prioritized and nearly completed all residential yard cleanups in the Tri-State Mining District and are now focusing on surficial nonresidential mine waste. Both Regions encourage appropriate chat usage and have developed and distributed similar mine waste fact sheets. Both Regions and all three of the affected states (Kansas, Oklahoma, and Missouri) are working jointly on a uniform watershed characterization approach for the Spring River Basin in addition to the joint efforts of state and federal trustees on natural resource damage issues. Since Region 6 has not finalized or released a plan for addressing the mine waste, as mentioned earlier, Region 7 is unaware of any material differences in addressing the Tri-State Mining District mine waste between Regions 6 and 7.

The sixth and final comment indicates that the Baxter Springs citizen feels EPA Region 6 and Region 7 have in common only "is both regions spend large sums of money and the problem still exists."

Response: Region 7 disagrees with the statement that "the problem still exists" at the Site. Considering the large areal extent of the site (115 square miles) and large volume of mine waste and contaminated soil, Region 7 has made much progress in cleaning up and ultimately closing the Site. In the rural areas of Galena, Region 7's cleanup consisted of providing a permanent water supply in 1994 to over 400 residences by the installation of deep aquifer drinking water supply wells and the formation of a rural water district. Additionally in Galena, a later Region 7 cleanup completed in 1995 included the remediation of 900 acres of mine waste and the abandonment of deep wells acting as a potential conduit for contaminants to migrate from the upper impacted aquifer to the lower pristine aquifer. Subsequently, an ecological study indicated improvements to water quality parameters in Short Creek following the mine waste cleanup in that area. Also in Galena, nearly 1,500 residential properties were characterized and over 700 properties had residential yard remediation. At the Badger, Waco, Lawton, and Crestline subsite, a ROD was issued in 2004 which addressed the mine waste there in a similar manner as that outlined in this ROD Amendment. It is anticipated that the remedial action in these areas will start late next year. Previously at the Baxter Springs and Treece subsites, the residential yard cleanups were completed in 2000. Finally, approximately 700,000 cubic yards of mine waste was remediated in Baxter Springs in 2004. Therefore, Region 7 has made significant advances in addressing the problems related to mining contamination at the Site.

A local landowner's letter contained eight comments relating to chat use, future land use of remediated areas, filling mine shafts and scheduling of construction. The comments are paraphrased below and EPA's responses are identified.

The first comment requests that the ROD Amendment formally recommend acceptable uses of chat as described in Region 7's February 2003 Fact Sheet on mine waste.

Response: The ROD Amendment description of the selected remedy encourages responsible chat sales and states that Region 7 will meet with potential sellers. The ROD Amendment also states that the Fact Sheet will be provided to chat sellers and is attached.

The second comment requests that the Agency specify acceptable uses for reclaimed land, specifically referring to the Ballard Mine area of the Baxter Springs subsite which was remediated approximately two years ago.

Response: The remediation work at areas such as the Ballard mine consists of grading the chat piles, then capping with 18 inches of soil and revegetating the cap. The primary beneficial use for such remediated areas is serving as an engineered structure that contains the remaining chat underneath the cap and prevents the chat from contributing to stream and sediment contamination. While there is some barrier to terrestrial animals that may be on the surface, that is incidental to the primary design purpose. It should be noted that the remediation was not designed to reclaim use of the land where the chat was located, but to prevent the chat piles from adversely affecting other areas, namely, the stream and sediments.

While the areas after remediation have the appearance of natural Kansas grassland, unfortunately, the areas are far from natural and are quite limited for uses beyond containing the chat. Uses with human occupancy such as residential or commercial are discouraged since the integrity of the cap could be too easily compromised with even a small amount of digging or construction. The same applies to grazing or till cropping, as both have the potential for erosion. Hay cropping might be acceptable since wheeled cutting and baling machinery likely would not disturb the cap and the perennial crop would serve as a good erosion preventative. However, Region 7 does not have studies showing that contaminants do not uptake into the hay from below the soil cap, so Region 7 is unwilling to recommend hay cropping as an approved agricultural use at this time.

Unfortunately, Region 7 generally sees no other significant use for the remediated areas other than as engineered vegetated structures that will need to be maintained. Still, landowners may have different proposals than those discussed above and may come up with something acceptable. Prior to land use changes, landowners should contact both Region 7 and the KDHE which is charged with oversight of the long-term operation and maintenance of the remedy to discuss the continued integrity of the soil cap. However, it is important to note, as explained previously, that a significant portion of land will be usable after the removal of mine waste for consolidation.

The third comment encourages Region 7 to cooperate with other environmental agencies to cap mine shafts while Region 7's contractors are on site.

Response: Burial of chat wastes in subsidence pits is one aspect of the remedy, but only inasmuch as there may be cost savings in construction. EPA's authority, appropriations, and ability to compel responsible parties to do work are limited to response actions to address releases of hazardous substances, pollutants, or contaminants. Mine shafts present a physical hazard at the site, but not a hazard that EPA has the legal authority to address. EPA coordinates closely with the Surface Mining Section of KDHE that uses limited state funds to address a number of mine shafts yearly. Ultimately, Kansas law defines the landowner responsibilities for such physical hazards. However, in areas where remediation has occurred, obscuring brush or woods are cleared with the result that the shafts may actually be better seen and avoided.

The fourth comment notes and agrees with EPA's acknowledgment that remediation costs are reduced if chat can be removed rather than burying it.

Response: EPA has not in past RODs for Cherokee County actively encouraged chat removal prior to remediation. Any chat sales and use should follow the Region 7 Fact Sheet on Mine Waste for acceptable uses (attached).

The fifth comment suggest that the ROD Amendment set forth a process to identify chat piles, prioritize EPA's work, and publish a schedule for the remediation of chat piles at the earliest opportunity to allow the maximum removal of chat piles prior to remediation.

Response: EPA generally agrees with the comment, but rather than in the ROD Amendment, EPA will specify in its remedial design that such activities are performed. This may be a complex process since some chat piles may be more commercially exploitable than others, some chat piles may contribute more than others to the environmental endangerment, some chat piles may logically phased before others in the overall construction, or a variety of factors. Landowners should not wait for such a design study or publication however, and are encouraged to proceed with chat removal and sales pursuant to the Region 7 Mine Waste Fact Sheet sooner rather than later.

EPA disagrees with the commenter that the goal should be to consolidate and use the chat rather than to consolidate and bury it. Chat sales and capping are not necessarily competing processes. Both will be ongoing during the remediation period. However, EPA fully anticipates that capping will have to be extensively applied to achieve the environmental goals in a reasonable time frame.

The sixth comment reiterates the fifth comment, adding that the publication of a work schedule should occur in advance of the design of the capping.

Response: EPA agrees, and reiterates the earlier response. The EPA remedial design in which a schedule is produced would be in advance of the construction design for individual chat piles and would include a schedule for when the construction design would occur.

The seventh comment requests that the ROD Amendment acknowledge that the chat is a valuable source of high quality aggregate for highway paving projects.

Response: EPA acknowledges that the chat can be acceptably used as aggregate in paving as provided in the Region 7 Mine Waste Fact Sheet. EPA is not qualified to remark on the physical quality of chat as aggregate.

The eighth comment suggests that expenditure of money on transportation projects is the best and most effective method to remediate chat and promote economic development.

Response: An increase in transportation projects that use chat would contribute to the remediation by decreasing the potential for contaminant loading on streams and sediments. Nonetheless, not all chat tailings are suitable for aggregate or commercially exploitable. As stated earlier, EPA fully anticipates that capping will have to be extensively applied to achieve the environmental goals in a reasonable time frame.

APPENDIX B

Detailed Cost Estimate for Modified Alternative 8A
Cherokee County, Kansas Superfund Site

	Item Description	Unit Cost	Baxter Springs Quantity	Treece Quantity	Baxter Springs Cost ($)	Treece Cost ($)	Total Cost ($)
1.0	SOURCE MATERIALS ACTIONS						
1.1	Excavate and place appoximately 20% of current mine waste either with existing wastes or in mine openings (per cubic yard)	$5.00	1,250,172				$6,250,860.00
1.2	Regrade and revegetate excavated areas (per acre)	$5,000.00	151				$754,600.00
1.3	Regrade, cap and revegetate remaining mine waste areas (per acre)	$35,000.00	1,023				$35,805,000.00
1.4	Excavate and place contaminated soil either with existing wastes or in mine openings.(per cubic yard)	$5.00	495,446				$2,477,230.00
	Subtotal Source Materials Actions (1.0)						$45,287,690.00
2.0	SURFACE WATER ACTIONS						
2.1	Stream Channel and Erosion Controls (per linear foot)	$26.00	6,300	14,400	$163,800.00	$374,400.00	$538,200.00
2.2	Sedimentation Basins	$48,000.00	2	4	$96,000.00	$192,000.00	$288,000.00
	Subtotal Surface Water Actions (2.0)						$826,200.00
	SUBTOTAL DIRECT COSTS FOR SOURCE MATERIALS AND SURFACE WATER ACTIONS						$46,113,890.00
3.0	INDIRECT COSTS						
3.1	Engineering Design	6%					$2,766,833.40
3.2	Construction Management	10%					$4,611,389.00
3.3	Contingency	20%					$9,222,778.00
3.4	Operation and Maintenance	3%					$1,383,416.70
3.5	Mobilization and Demobilization	5%					$2,305,694.50
	Subtotal Indirect Costs for Source Materials and Surface Water Actions (3.0)						$20,290,111.60
	TOTAL ESTIMATED COST OF MODIFIED ALTERNATIVE 8A IN 2006						$66,404,001.60

Assumptions:

1. The unit costs are based on approximate actual costs for the recently completed remedy at the Baxter Springs subsite.
2. The Baxter Springs Quantity and Treece Quantity are based on the remedial work conducted under the 1997 Record of Decision, select chat piles at Treece sold for commercial purposes (see Note 3), and Tables A-1 and A-2 in Appendix A in the Feasibility Study. These tables are entitled Baxter Springs Mine/Mill Waste Piles and Treece Mine/Mill Waste Piles, respectively.
3. Select current chat piles at Treece are anticipated to be sold in the future during remediation, leaving behind only a footprint. These future footprints may be included in Items 1.1 and 1.2. Pile TC-3 is currently being sold and pile TC-23 is being used for construction projects. Piles TC-9, TC-15 (Section 14), TC-16 (Section 14), and TC-45 have been used historically for commercial purposes and some deposits have existing commercial potential.
4. The engineering design cost for the project was estimated to be 6% of the total direct cost.
5. The construction management cost for the project was estimated to be 10% of the total direct cost.
6. The contingency cost for the project was estimated to be 25% of the total direct cost.
7. The operation and maintenance cost for the project was estimated to be 3% of the total direct cost.
8. The mobilization and demobilization cost for the project was estimated to be 5% of the total direct cost.

APPENDIX B

STATEMENT OF WORK FOR
REMEDIAL DESIGN AND REMEDIAL ACTION
OPERABLE UNIT 04 OF THE
CHEROKEE COUNTY SUPERFUND SITE
CHEROKEE COUNTY, KANSAS

This Statement of Work (SOW) provides the framework for implementing the Remedial Design and the Remedial Action (RD/RA) to be conducted by the Settling Defendants at Operable Unit 04 (OU-4), of the Cherokee County Superfund Site (Site) located in Cherokee County, Kansas. The required remedy is set forth in the Record of Decision (ROD) Amendment for the Baxter Springs and Treece subsites issued by the U.S. Environmental Protection Agency, Region VII (EPA) in September 2006.

This SOW is an attachment to the Consent Decree (CD) entered into by the Settling Defendants and the United States of America for the RD/RA of OU-4.

1.0 BACKGROUND

The Site is located in the Kansas portion of the Tri-State Mining District (District). The District was one of the largest zinc-lead mining areas in the world, encompassing approximately 2,500 square miles in southeast Kansas, southwest Missouri, and northeast Oklahoma. Nearly continuous mining and milling was conducted in the District from 1850 until 1970.

The EPA placed the Site on the National Priorities List in 1983. The Site encompasses approximately 115 square miles in Cherokee County, Kansas and has been divided into seven subsites designated as the Galena, Baxter Springs, Treece, Badger, Lawton, Waco and Crestline subsites. The general location and boundaries of these subsites are shown on Figure 1.

The Treece subsite is located in the southwest portion of the Site (Figure 1) and encompasses approximately 11 square miles. A Remedial Investigation and Feasibility Study (RI/FS) of the Treece and Baxter Springs subsites was conducted by a group of potentially responsible parties (PRPs) in the early 1990s pursuant to an Administrative Order on Consent (AOC) dated May 7, 1990. On August 20, 1997, EPA issued a ROD for these subsites and on January 12, 2000, ASARCO, Inc., Gold Fields Mining Corporation, Blue Tee Corp., and The Doe Run Resources Corporation entered into a CD to implement certain response actions for the Treece subsite in accordance with the ROD. In 2006, EPA issued a ROD Amendment for the Baxter Springs and Treece subsites to address aspects of the subsites not encompassed by the earlier ROD.

1.1 Selected Remedy

The September 2006 ROD Amendment specified the following remedial actions to be conducted at the Treece subsite:

- Excavation and sub-aqueous disposal in mine subsidences or pits or consolidation and capping of all surficial mill wastes, including chat and flotation tailings;
- Capping of filled subsidence pits, consolidation areas and exposed tailings impoundments with compacted clay and topsoil with a total minimum thickness of 1.5 feet;
- Installation of sedimentation basins, detention ponds, dikes and other stormwater and erosion controls, as necessary, to properly control run-on and run-off; and
- Restoration of all areas disturbed from the implementation of the remedy, including grading to facilitate drainage and the establishment of a stable vegetative cover.

2.0 SCOPE OF REMEDIAL DESIGN AND REMEDIAL ACTION

The Settling Defendants shall conduct the RD/RA required by the September 2006 ROD Amendment in the areas identified on Table 1 of this SOW. The RD/RA shall address all mill wastes located on the identified areas and any associated surficial soils which exceed the defined remedial action levels. If a tributary stream is located in an area and there are no mining-related wastes in the drainage basin upgradient of the area, then that portion of the tributary stream in that area shall be addressed as part of the RD/RA. Mine-related wastes currently incorporated into active roads, or commercial and industrial developments, are specifically not subject to this Statement of Work.

The RD/RA shall include the tasks defined in the following Sections. All plans and submittals are subject to EPA approval.

3.0 REMEDIAL DESIGN

3.1 Remedial Design Work Plan

Within 30 days of the lodging of the Consent Decree, Settling Defendants shall notify EPA in writing of the name, title, and qualifications of their Project Coordinators. Likewise, within 60 days of the lodging of the Consent Decree, the same information will be provided for the Supervising Contractors.

Within 45 days of EPA's approval of the Project Coordinators and Supervising Contractors, and the subsequent issuance of the authorization to proceed pursuant to

Paragraph 9 of the CD, each Settling Defendant, or a group of Settling Defendants, shall prepare and submit to EPA for review and approval a Remedial Design Work Plan (RD Work Plan) for the design of the remedial actions at the areas identified in Table 1.

The RD Work Plan shall define the approach for collection of the data for the RD, provide for the design of the remedy set forth in the ROD Amendment, and include plans and schedules for implementation of all necessary pre-design and design tasks.

The RD Work Plan shall include at a minimum a Design Analysis Report, Chemical Data Acquisition Plan, Quality Assurance Project Plan, and a Health and Safety Plan. The requirements of these plans are discussed below. In addition, the RD Work Plan shall include a schedule for completion of the Remedial Action Work Plan (the RA Work Plan).

3.1.1 Design Analysis Report

The Design Analysis Report (DAR) shall present the general design assumptions and parameters that will be used to design the remedies for the parcels, criteria to be used to determine which mill wastes will be deposited in subsidence pits, mine pits and mine shafts, which wastes will be capped in place, the performance standards to be used for design, and measures to be taken to ensure compliance with applicable, relevant, or appropriate requirements (ARARs), pertinent codes and other regulatory requirements.

3.1.2 Chemical Data Acquisition Plan

The Chemical Data Acquisition Plan (CDAP) shall present: 1) the overall approach that will be used to define the horizontal and vertical extent of mill wastes to be addressed by the remedial action, 2) equipment and procedures for field screening, 3) sample collection and custody procedures, 4) analytical methods for the analysis of samples collected for laboratory analysis and 5) data quality objectives to be used as part of the investigation.

3.1.3 Quality Assurance Project Plan

The Quality Assurance Project Plan (QAPP) shall be prepared in accordance with Guidance for Quality Assurance Project Plans, EPA QA/G-5 and EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5 and, at a minimum, shall include: 1) discussion of quality assurance objectives, 2) calibration procedures and frequencies, 3) internal quality control checks, 4) data reduction, validation, and reporting procedures, 5) performance and system audits and 6) corrective actions and quality assurance reports.

3.1.4 Health and Safety Plan

The Health and Safety Plan (HASP) shall follow all applicable EPA guidance, Occupational Health and Safety Administration (OSHA) requirements as presented in 29 C.F.R. Sections 1910 and 1926, and applicable requirements under the National Oil and Hazardous Substances Pollution Contingency Plan presented in 40 C.F.R. Section 300.150.

To the extent possible, the CDAP, QAPP and HASP shall be prepared to address both the RD and RA phases of the Work.

3.2 Remedial Design Documents

Within 30 days of EPA approval of the RD Work Plan, the Settling Defendants shall initiate the pre-design investigations for the design of the remedy for the areas identified in Table 1. Each Settling Defendant shall conduct a single RD that includes all areas of their responsibility, inclusive of any joint arrangements among Settling Defendants for common areas of responsibility.

3.2.1 Preliminary Design Document

Within 120 days of initiation of the pre-design investigation for each Settling Defendants' areas identified in Table 1, a Preliminary Design Document shall be prepared and submitted to EPA for review and approval. The Preliminary Design Document shall show the design as approximately 30 percent complete. This document shall present the findings and results of the pre-design studies and include, at a minimum, the following design components:

- Volume of mill wastes to be excavated and disposed of subaqueously;
- Volume and area of mill wastes to be consolidated and capped in-place;
- Volume and area of soil exceeding remedial action levels;
- Location and capacity of voids to be used for subaqueous disposal;
- Preliminary cap design;
- Design calculations and outline of design specifications; and
- Access, easement and permit requirements.

After review by EPA, a design meeting shall be held at EPA's offices or the Site to discuss the preliminary design with each Settling Defendant or group of Settling Defendants to define any additional requirements to complete the design.

3.2.2 Pre- Final Design Document

Within 60 days of receipt of EPA's comments on the Preliminary Design Document each Settling Defendant or group of Settling Defendants shall prepare and submit to EPA for review and approval the Pre-final Design Document. The Pre-final

Design Document shall show the design as approximately 95 percent complete. The Pre-final Design Document shall address all comments received on the Preliminary Design Document and shall include volume calculations, design specifications, and design drawings.

3.2.3 Final Design Document

Within 30 days of receipt of EPA's comments on the Pre-Final Design Document a Final Design Document shall be prepared and submitted to EPA for review and approval. The Final Design Document shall show the design as 100% complete and address all comments received on the Pre-Final Design Document.

4.0 REMEDIAL ACTION

4.1 Remedial Action Work Plan

Within 60 days of EPA approval of the Final Design Document each Settling Defendant, or group of Settling Defendants, shall submit to EPA for review and approval a RA Work Plan which defines the requirements and schedule for the implementation of the remedial action. The RA Work Plan shall include a Performance Standard Verification Plan, Construction Quality Assurance Plan, and an Operation and Maintenance Plan. The requirements of these plans are discussed below.

The HASP included in the RA Work Plan will be reviewed and revised, if necessary, to address any elements not adequately addressed in the HASP contained in the RD Work Plan.

4.1.1 Performance Standard Verification Plan

The Performance Standard Verification Plan shall present the performance measures to be used to verify that both short-term and long-term Performance Standards are being satisfied. The clean-up levels for impacted soils and mining wastes specified in the 2006 ROD Amendment are the following: lead at 400 parts per million (ppm), cadmium at 10 ppm, and zinc at 1,100 ppm.

4.1.2 Construction Quality Assurance Plan

The Construction Quality Assurance Plan (CQAP) shall present the quality assurance measures that will be used during the construction of the remedy to ensure that the completed remedy meets or exceeds all design criteria, plans, and specifications. The CQAP shall contain, at a minimum, the following elements:

- Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the RA;

- Qualifications of the Quality Assurance Official to demonstrate he or she possesses the training and experience necessary to fulfill the identified responsibilities;

- Protocols for sampling and testing used to monitor construction;

- Identification of proposed quality assurance sampling activities including the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation; and

- Reporting requirements for CQA activities shall be described in detail in the CQAP. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records consistent with the requirements of the CD shall be presented in the CQAP.

4.1.3 Operation and Maintenance Plan

The Operation and Maintenance (O&M) Plan shall discuss the procedures that will be used to verify the long-term effectiveness of the remedy and measures to be taken to maintain the various components of the remedy. The O&M Plan shall include the following elements:

- Description of O&M tasks and performance frequency;

- Description of potential operational problems and required maintenance;

- Description of routine inspections and testing;

- Description and schedule for corrective actions that may be required; and

- Description of O&M documentation and reporting mechanisms.

4.2 Remedy Implementation

Within 30 days of EPA's approval of the RA Work Plan, the Settling Defendants shall initiate the implementation of the remedial activities required under the approved RA Work Plan. Within 90 days of a Settling Defendant, or group of Settling Defendants, concluding that the RA required under the CD has been fully performed and that the Performance Standards have been attained, the Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by the Settling Defendants, EPA, and the State of Kansas. If after the pre-certification inspection the Settling Defendants believe that the RA has been completed and that the Performance Standards have been

attained, each Settling Defendant, or group of Settling Defendants, shall submit within 90 days of the pre-certification inspection, a RA Completion Report to EPA. Each Report shall detail the remedial activities completed by each Settling Defendant, or group of Settling Defendants, and include as-built drawings signed and stamped by a registered professional engineer. The registered professional engineer and the Project Coordinator(s) must state that the remedy was constructed in accordance with the EPA-approved design documents and in full satisfaction of the requirements of the Consent Decree. The Reports shall also contain the following statement signed by a responsible corporate official of a Settling Defendant or the Settling Defendants' Project Coordinator(s):

> "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

5.0 PROJECT SPECIFIC CONDITIONS

All submittals shall be provided to EPA and the State of Kansas and shall consist of two copies to EPA and one copy to the State of Kansas.

EPA and the State of Kansas will be offered an opportunity to participate in contractor meetings and site visits in which the project scope and/or problem issues are discussed. A minimum of 15 days notice will be provided to EPA and the State of Kansas regarding the opportunity to collect environmental samples and conduct joint site visits.

The progress reports shall contain the information specified in paragraph 30 of the Consent Decree.

The Project Coordinator(s) will regularly brief the EPA Project Manager on the current status of the project. Briefings will be monthly, at a minimum, unless a different frequency is mutually agreed upon by both project managers. Emphasis shall be placed on project scope, implementation, and schedule.

All site personnel and contractors shall have the appropriate safety training and be involved in a medical monitoring program as specified in 29 CFR Section 1910.120.

The EPA Project Manager is the point of contact for the project and is designated as Mr. Dave Drake. The contact for the State of Kansas is Mr. Leo Henning. Contact information is provided below:

Mr. Dave Drake
U.S. Environmental Protection Agency
901 North 5th Street
Kansas City, KS 66101
Phone: (913) 551-7626
Fax: (913) 551-7063
E-mail: drake.dave@epa.gov

Mr. Leo Henning
Kansas Department of Health and Environment
1000 SW Jackson, Suite 410
Topeka, KS 66612-1367
Phone: (785) 296-1914
Fax: (785) 296-1686

6.0 MAJOR DELIVERABLES AND SCHEDULE

A summary of the project tasks, deliverables, and their due dates for each Settling Defendant is presented below:

Task /Deliverable	**Due Date (Calendar Days)**
Submit RD Work Plan	Within 45 days of the approval of the Project Coordinator and Supervising Contractor and issuance of authorization to proceed.
Pre-Design Investigations	Initiate within 30 days of EPA's approval of RD Work Plan.
Preliminary Design Document	Within 120 days of initiation of pre-design investigations.
Pre-Final Design Document	Within 60 days of receipt of EPA's comments on the Preliminary Design Document.
Final Design Document	Within 30 days of receipt of EPA comments on the Pre-Final Design Document.
RA Work Plan	Within 60 days of approval of Final Design.

Initiate Remedial Action	Within 30 days of approval of the RA Work Plan.
Completion of Remedial Action	In accordance with the project schedule in the EPA approved Final RA Work Plan.
Pre-Certification Inspection	Scheduled within 90 days of completion of the RA.
RA Completion Report	Within 90 days of the Pre-Certification Inspection
Progress Reports	Monthly on the 15th of the month throughout the RD/RA

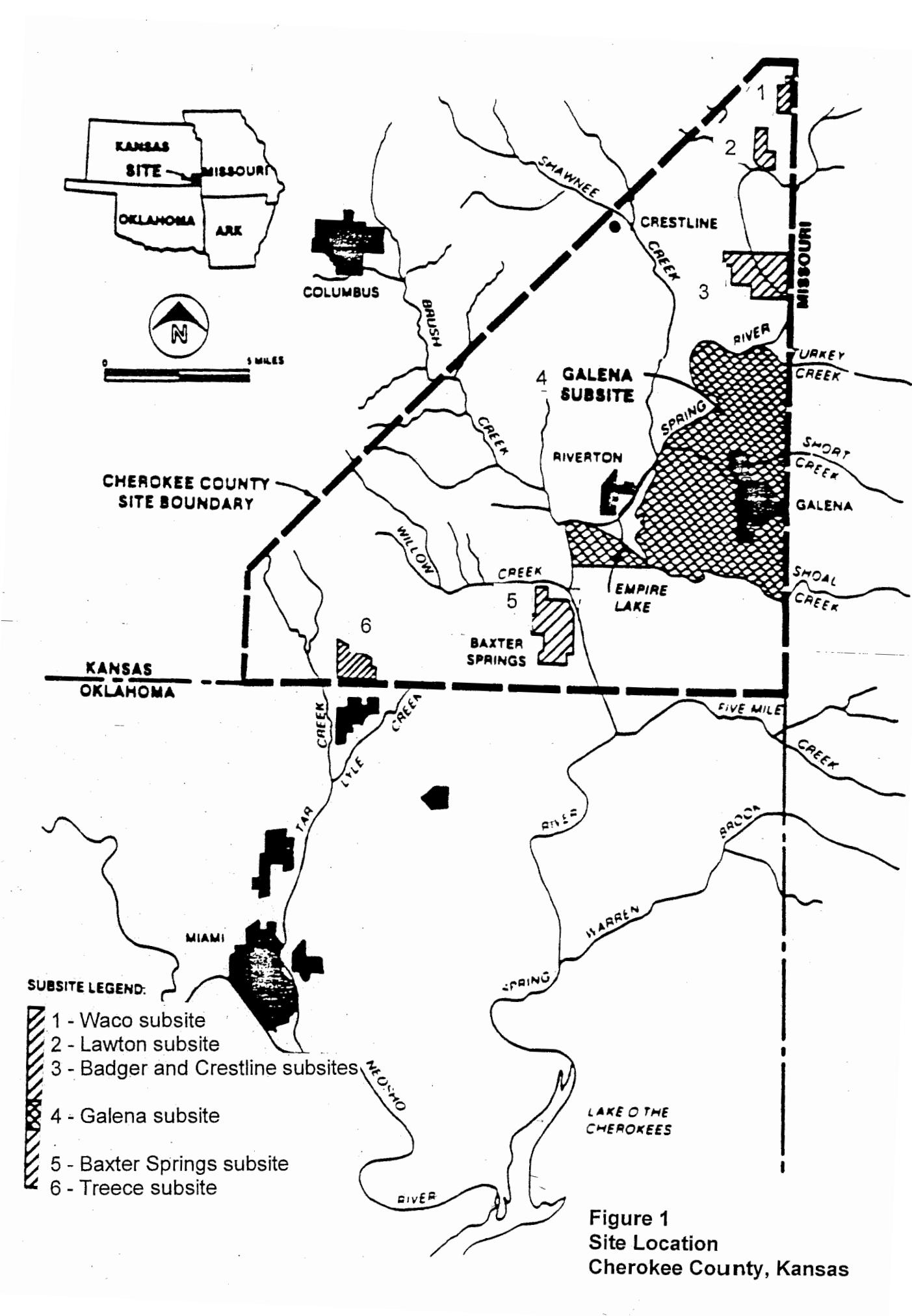


Figure 1
Site Location
Cherokee County, Kansas

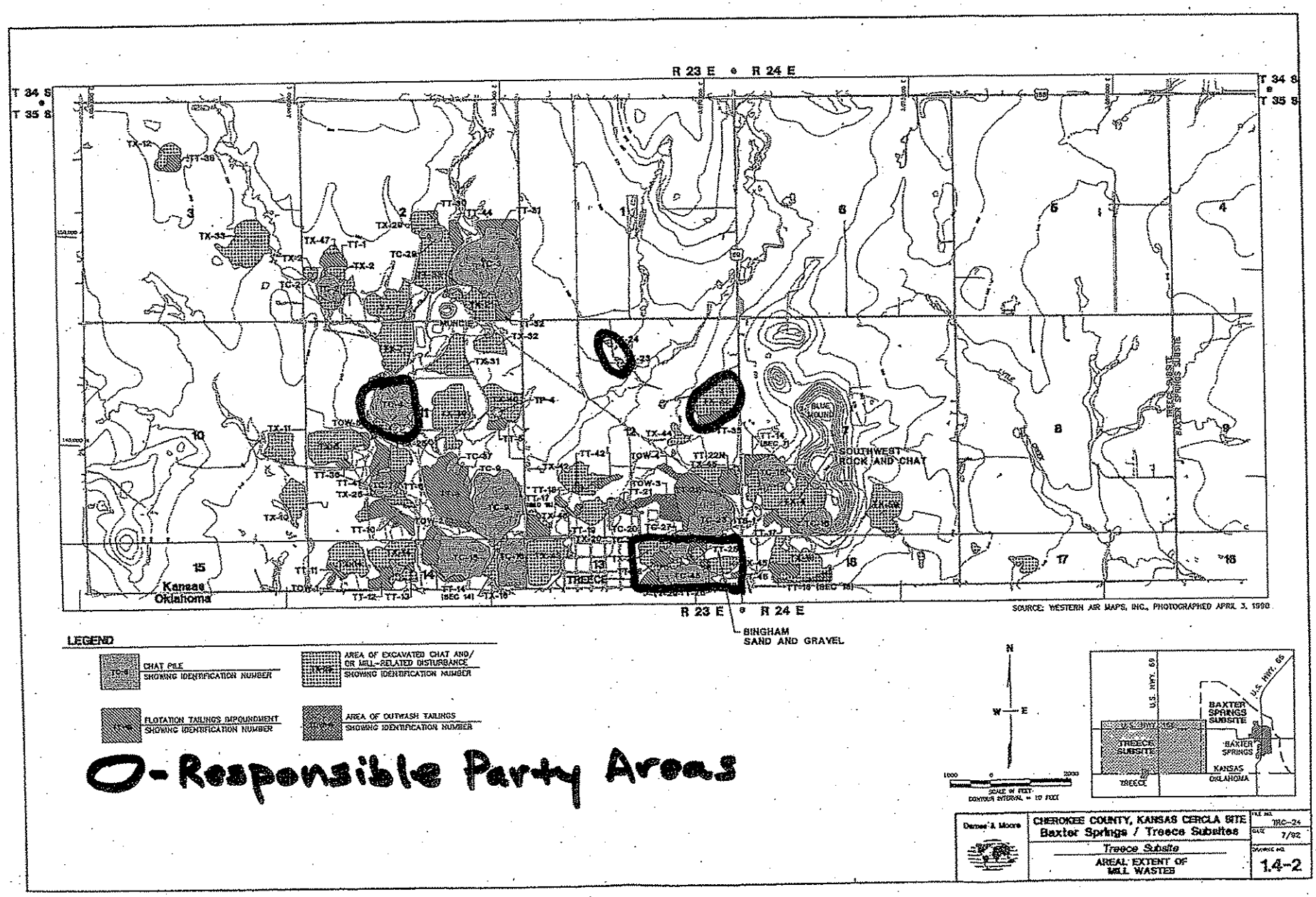
TABLE 1

MILL WASTE AREAS TO BE ADDRESSED BY SETTLING DEFENDANTS

PARCEL NAME	LEGAL DESCRIPTION	MILL WASTE AREAS	SETTLING DEFENDANT
Jarrett	NE ¼ and E ½ NW ¼ , Section 12, Township 35 S, Range 23 E	TX-22, TX-23,TX-24 and TT-35	The Doe Run Resources Corporation
Foley	NW ¼ , Section 7, Township 35 S, Range 24 E	None	The Doe Run Resources Corporation
Mullen	SW ¼ SW ¼ , Section 6, Township 35 S, Range 24 E	None	The Doe Run Resources Corporation
Robinson	S ½ NW ¼ , Section 11, Township 35 S, Range 23 E	TX-30 and TC-4	The Doe Run Resources Corporation and Blue Tee Corp.
Blue Diamond-Blue Mound	Lots 1 and 2, N ½ NE ¼, Section 13, Township 35 S, Range 23 E	TX-27, TC-27,TC-45, TT-24, TT-25, TT-26, TT-28, TT-29, TT-45, TX-45*	Gold Fields LLC

*Excluding Bingham ongoing commercial operations

APPENDIX C 1



O-Responsible Party Areas

APPENDIX C2

MILL WASTE AREAS TO BE ADDRESSED BY SETTLING DEFENDANTS

PARCEL NAME	LEGAL DESCRIPTION	MILL WASTE AREAS	SETTLING DEFENDANT
Jarrett	NE ¼ and E ½ NW ¼ , Section 12, Township 35 S, Range 23 E	TX-22, TX-23,TX-24 and TT-35	The Doe Run Resources Corporation
Foley	NW ¼ , Section 7, Township 35 S, Range 24 E	None	The Doe Run Resources Corporation
Mullen	SW ¼ SW ¼ , Section 6, Township 35 S, Range 24 E	None	The Doe Run Resources Corporation
Robinson	S ½ NW ¼ , Section 11, Township 35 S, Range 23 E	TX-30 and TC-4	The Doe Run Resources Corporation and Blue Tee Corp.
Blue Diamond-Blue Mound	Lots 1 and 2, N ½ NE ¼, Section 13, Township 35 S, Range 23 E	TX-27, TC-27,TC-45, TT-24, TT-25, TT-26, TT-28, TT-29, TT-45, TX-45*	Gold Fields LLC

*Excluding Bingham ongoing commercial operations

Appendix D1

TRUST AGREEMENT

Cherokee County, Kansas Superfund Site
Treece Subsite
The Doe Run Resources Corporation--Jarrett, Foley and Mullen Parcels

Dated:_____, _____

This trust Agreement (this "Agreement") is entered into as of _____ by and between The Doe Run Resources Corporation, a corporation organized and existing under the laws of the State of New York (the "Grantor" or "Doe Run"), and Marshall & Ilsley Trust Company N.A. a trust company chartered under the laws of the United States (the "Trustee").

WHEREAS, the United States Environmental Protection Agency ("EPA"), an agency of the United States federal government and the Grantor have entered into a Consent Decree, United States of America v. Blue Tee Corp. et al., Civil Action No. _____, for the Cherokee County, Kansas Superfund Site, Treece Subsite (hereinafter the "Consent Decree");

WHEREAS, the Consent Decree provides that the Grantor shall provide assurance that funds will be available as and when needed for performance of the Work required by the Consent Decree;

WHEREAS, in order to provide such financial assurance, Grantor has agreed to establish and fund separate environmental trusts for the Jarrett, Foley and Mullen parcels for which Doe Run is to perform the Work required by the Consent Decree;

WHEREAS, the trust created by this Agreement is intended to fulfill Doe Run's financial assurance obligation for the Work related to the Jarrett, Foley and Mullen parcels; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Beneficiary" shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term "Business Day" means any day, other than a Saturday or a Sunday, that banks are open for business in Kansas City, Kansas, USA.

(c) The term "Claim Certificate" shall have the meaning assigned thereto in Section 4(a) of this Agreement.

(d) The term "Fund" shall have the meaning assigned thereto in Section 3 of this Agreement.

(e) The term "Grantor" shall have the meaning assigned thereto in the first paragraph of this Agreement.

(f) The term "Objection Notice" shall have the meaning assigned thereto in Section 4(b) of this Agreement.

(g) The term "Jarrett, Foley and Mullen parcels" shall have the meaning assigned thereto in Section 2 of this Agreement.

(h) The term "Trust" shall have the meaning assigned thereto in Section 3 of this Agreement.

(i) The term "Trustee" shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(j) The term "Work" shall have the meaning assigned thereto in the Consent Decree.

Section 2. Identification of Facilities and Costs. This Agreement pertains to costs for Work related to the Jarrett, Foley and Mullen parcels in the Treece Subsite of the Cherokee County, Kansas Superfund Site in Cherokee County, Kansas consisting of the NE 1/4 and E 1/2 of the NW 1/4, Section 12, Township 35 S, Range 23 E; the NE 1/4, Section 7, Township 35 S, Range 24 E; and SW 1/4 SW 1/4, Section 6, Township 35 S, Range 24 E; containing waste areas TX-22, TX-23, TX-24 and TT-35 ("the Jarrett, Foley and Mullen parcels") pursuant to the above referenced Consent Decree and Appendix C of that Consent Decree.

Section 3. Establishment of Trust Fund. The Grantor and the Trustee hereby establish a trust (the "Trust"), for the benefit of EPA (the "Beneficiary"), to assure that funds are available to pay for performance of the Work related to the Jarrett, Foley and Mullen parcels in the event that Grantor fails to conduct or complete the Work required by, and in accordance with the terms of, the Consent Decree. The Grantor and the Trustee intend that no third party shall have access to monies or other property in the Trust except as expressly provided herein. The Trust is established initially as consisting of funds in the amount of One Million Two Hundred Thousand U.S. Dollars ($1,200,000). Such funds, along with any other monies and/or other property hereafter deposited into the Trust, and together with all earnings and profits thereon, are referred to herein collectively as the "Fund." The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor owed to the United States.

Section 4. Payment for Work Required Under the Consent Decree. The Trustee shall make payments from the Fund in accordance with the following procedures.

(a) From time to time, the Grantor and/or its representatives or contractors may request that the Trustee make payment from the Fund for Work related to the Jarrett, Foley and Mullen parcels performed under the Consent Decree by delivering to the Trustee and EPA a written invoice and certificate (together, a "Claim Certificate") signed by an officer of the Grantor (or the relevant representative or contractor) and certifying:

(i) that the invoice is for Work performed related to the Jarrett, Foley and Mullen parcels in accordance with the Consent Decree;

(ii) a description of the Work that has been performed, the amount of the claim, and the identity of the payee(s); and

(iii) that the Grantor has sent a copy of such Claim Certificate to EPA, both to the EPA attorney and the EPA Remedial Project Manager at their respective addresses shown in this Agreement, the date on which such copy was sent, and the date on which such copy was received by EPA as evidenced by a return receipt (which return receipt may be written, as in the case of overnight delivery, certified mail, or other similar delivery methods, or electronic, as in the case of e-mail, facsimile, or other similar delivery methods).

(b) EPA may object to any payment requested in a Claim Certificate submitted by the Grantor (or its representatives or contractors), in whole or in part, by delivering to the Trustee a written notice (an "Objection Notice") within thirty (30) days after the date of EPA's receipt of the Claim Certificate as shown on the relevant return receipt. An Objection Notice sent by EPA shall state (i) whether EPA objects to all or only part of the payment requested in the relevant Claim Certificate; (ii) the basis for such objection; (iii) that EPA has sent a copy of such Objection Notice to the Grantor and the date on which such copy was sent; and (iv) the portion of the payment requested in the Claim Certificate, if any, which is not objected to by EPA, which

undisputed portion the Trustee shall proceed to distribute in accordance with Section 4(d) below. EPA may object to a request for payment contained in a Claim Certificate only on the grounds that the requested payment is either not for the costs of Work under the Consent Decree or is otherwise inconsistent with the terms and conditions of the Consent Decree.

(c) If the Trustee receives a Claim Certificate and does not receive an Objection Notice from EPA within the time period specified in Section 4(b) above, the Trustee shall, after the expiration of such time period, promptly make the payment from the Fund requested in such Claim Certificate.

(d) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, but which Objection Notice objects to only a portion of the requested payment, the Trustee shall, after the expiration of such time period, promptly make payment from the Fund of the uncontested amount as requested in the Claim Certificate. The Trustee shall not make any payment from the Fund for the portion of the requested payment to which EPA has objected in its Objection Notice.

(e) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, which Objection Notice objects to all of the requested payment, the Trustee shall not make any payment from the Fund for amounts requested in such Claim Certificate.

(f) If, at any time during the term of this Agreement, EPA implements a "Work Takeover" pursuant to the terms of the Consent Decree and intends to direct payment of monies from the Fund to pay for performance of Work during the period of such Work Takeover, EPA shall notify the Trustee in writing of EPA's commencement of such Work Takeover. Upon receiving such written notice from EPA, the disbursement procedures set forth in Sections 4(a)-

(e) above shall immediately be suspended, and the Trustee shall thereafter make payments from the Fund only to such person or persons as the EPA may direct in writing from time to time for the sole purpose of providing payment for performance of Work required by the Consent Decree. Further, after receiving such written notice from EPA, the Trustee shall not make any disbursements from the Fund at the request of the Grantor, including its representatives and/or contractors, or of any other person except at the express written direction of EPA. If EPA ceases such a Work Takeover in accordance with the terms of the Consent Decree, EPA shall so notify the Trustee in writing and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Sections 4(a)-(e) above shall be reinstated.

(g) While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

Section 5. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with directions which the Grantor may communicate in writing to the Trustee from time to time, except that:

(a) securities, notes, and other obligations of any person or entity shall not be acquired or held by the Trustee with monies comprising the Fund, unless they are securities, notes, or other obligations of the U.S. federal government or any U.S. state government or as otherwise permitted in writing by the EPA;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. federal or any U.S. state government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 6. Commingling and Investment. The Trustee is expressly authorized in its discretion to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

Section 7. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. federal government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the U.S. federal government.

Section 8. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of the Fund and this Trust shall be paid by the Grantor.

Section 9. Annual Valuation. The Trustee shall annually, no more than thirty (30) days after the anniversary date of establishment of the Fund, furnish to the Grantor and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as EPA may request from time to time.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its representation of the Trustee, serve as counsel to the Grantor.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor and as notified in writing to the Beneficiary.

Section 12. Trustee and Successor Trustee. The Trustee and any replacement Trustee must be approved in writing by EPA and must not be affiliated with the Grantor. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee approved in writing by EPA and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to EPA or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. the successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantor, the Beneficiary, and the present Trustee by certified mail no less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 8.

Section 13. Instructions to the Trustee. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended only by an instrument in writing executed by the Grantor and the Trustee, and with the prior written consent of EPA.

Section 15. Irrevocability and Termination. This Trust shall be irrevocable and shall continue until terminated upon the earlier to occur of (a) the written direction of EPA to terminate, consistent with the terms of the Consent Decree and (b) the complete exhaustion of the Fund comprising the Trust as certified in writing by the Trustee to EPA and the Grantor. Upon termination of the Trust pursuant to Section 15(a), all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Kansas.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 19. Notices. All notices and other communications given under this Agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantor, to _____.

(b) If to the Trustee, to _____.

(c) If to EPA, to EPA Region 7, Remedial Project Manager for the Site, Superfund Division, and to EPA Region 7, Office of Regional Counsel contact for the Site, both at 901 N. 5th Street, Kansas City, Kansas 66101.

In Witness Whereof, the parties hereto have caused this Agreement to be executed by their respective officers duly authorized and attested as of the date first above written:

GRANTOR

Signature of Grantor: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Grantor, The Doe Run Resources Corporation, described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

TRUSTEE

Signature of Trustee: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Trustee, Marshall & Ilsley Trust Company N.A., described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

Appendix D2

TRUST AGREEMENT

Cherokee County, Kansas Superfund Site
Treece Subsite
Blue Tee Corp.--Robinson parcel

Dated:_____, _____

This trust Agreement (this "Agreement") is entered into as of _____ by and between Blue Tee Corp., a corporation organized and existing under the laws of the State of _____ (the "Grantor" or "Blue Tee"), and _____, a trust company chartered under the laws of the United States (the "Trustee").

WHEREAS, the United States Environmental Protection Agency ("EPA"), an agency of the United States federal government and the Grantor have entered into a Consent Decree, United States of America v. Blue Tee Corp. et al., Civil Action No. _____, for the Cherokee County, Kansas Superfund Site, Treece Subsite (hereinafter the "Consent Decree");

WHEREAS, the Consent Decree provides that the Grantor shall provide assurance that funds will be available as and when needed for performance of the Work required by the Consent Decree;

WHEREAS, in order to provide such financial assurance, Grantor has agreed to establish and fund an environmental trust for the Robinson parcel for which Blue Tee and The Doe Run Resources Corporation are to jointly and severally perform the Work required by the Consent Decree;

WHEREAS, the trust created by this Agreement is intended, in conjunction with a similar trust entered into by The Doe Run Resources Corporation and another trustee, to fulfill Blue Tee's financial assurance obligation for the Work related to the Robinson parcel; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Beneficiary" shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term "Business Day" means any day, other than a Saturday or a Sunday, that banks are open for business in Kansas City, Kansas, USA.

(c) The term "Claim Certificate" shall have the meaning assigned thereto in Section 4(a) of this Agreement.

(d) The term "Fund" shall have the meaning assigned thereto in Section 3 of this Agreement.

(e) The term "Grantor" shall have the meaning assigned thereto in the first paragraph of this Agreement.

(f) The term "Objection Notice" shall have the meaning assigned thereto in Section 4(b) of this Agreement.

(g) The term "Robinson parcel" shall have the meaning assigned thereto in Section 2 of this Agreement.

(h) The term "Trust" shall have the meaning assigned thereto in Section 3 of this Agreement.

(i) The term "Trustee" shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(j) The term "Work" shall have the meaning assigned thereto in the Consent Decree.

Section 2. Identification of Facilities and Costs. This Agreement pertains to costs for Work related to the Robinson parcel in the Treece Subsite of the Cherokee County, Kansas Superfund Site in Cherokee County, Kansas consisting of the S 1/2 NW 1/4, Section 11, Township 35 S, Range 23 E; containing waste areas TX-30 and TC-4 ("the Robinson parcel") pursuant to the above referenced Consent Decree and Appendix C of that Consent Decree.

Section 3. Establishment of Trust Fund. The Grantor and the Trustee hereby establish a trust (the "Trust"), for the benefit of EPA (the "Beneficiary"), to assure that funds are available to pay for performance of the Work related to the Robinson parcel in the event that Grantor fails to conduct or complete the Work required by, and in accordance with the terms of, the Consent Decree. The Grantor and the Trustee intend that no third party shall have access to monies or other property in the Trust except as expressly provided herein. The Trust is established initially as consisting of funds in the amount of Eight Hundred Thirty-One Thousand Six Hundred U.S. Dollars ($831,600). Such funds, along with any other monies and/or other property hereafter deposited into the Trust, and together with all earnings and profits thereon, are referred to herein collectively as the "Fund." The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor owed to the United States.

Section 4. Payment for Work Required Under the Consent Decree. The Trustee shall make payments from the Fund in accordance with the following procedures.

(a) From time to time, the Grantor and/or its representatives or contractors may request that the Trustee make payment from the Fund for Work related to the Robinson parcel performed under the Consent Decree by delivering to the Trustee and EPA a written invoice and certificate (together, a "Claim Certificate") signed by an officer of the Grantor (or the relevant representative or contractor) and certifying:

(i) that the invoice is for Work performed related to the Robinson parcel in accordance with the Consent Decree;

(ii) a description of the Work that has been performed, the amount of the claim, and the identity of the payee(s); and

(iii) that the Grantor has sent a copy of such Claim Certificate to EPA, both to the EPA attorney and the EPA Remedial Project Manager at their respective addresses shown in this Agreement, the date on which such copy was sent, and the date on which such copy was received by EPA as evidenced by a return receipt (which return receipt may be written, as in the case of overnight delivery, certified mail, or other similar delivery methods, or electronic, as in the case of e-mail, facsimile, or other similar delivery methods).

(b) EPA may object to any payment requested in a Claim Certificate submitted by the Grantor (or its representatives or contractors), in whole or in part, by delivering to the Trustee a written notice (an "Objection Notice") within thirty (30) days after the date of EPA's receipt of the Claim Certificate as shown on the relevant return receipt. An Objection Notice sent by EPA shall state (i) whether EPA objects to all or only part of the payment requested in the relevant Claim Certificate; (ii) the basis for such objection; (iii) that EPA has sent a copy of such

Objection Notice to the Grantor and the date on which such copy was sent; and (iv) the portion of the payment requested in the Claim Certificate, if any, which is not objected to by EPA, which undisputed portion the Trustee shall proceed to distribute in accordance with Section 4(d) below. EPA may object to a request for payment contained in a Claim Certificate only on the grounds that the requested payment is either not for the costs of Work under the Consent Decree or is otherwise inconsistent with the terms and conditions of the Consent Decree.

(c) If the Trustee receives a Claim Certificate and does not receive an Objection Notice from EPA within the time period specified in Section 4(b) above, the Trustee shall, after the expiration of such time period, promptly make the payment from the Fund requested in such Claim Certificate.

(d) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, but which Objection Notice objects to only a portion of the requested payment, the Trustee shall, after the expiration of such time period, promptly make payment from the Fund of the uncontested amount as requested in the Claim Certificate. The Trustee shall not make any payment from the Fund for the portion of the requested payment to which EPA has objected in its Objection Notice.

(e) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, which Objection Notice objects to all of the requested payment, the Trustee shall not make any payment from the Fund for amounts requested in such Claim Certificate.

(f) If, at any time during the term of this Agreement, EPA implements a "Work Takeover" pursuant to the terms of the Consent Decree and intends to direct payment of monies from the Fund to pay for performance of Work during the period of such Work Takeover, EPA

shall notify the Trustee in writing of EPA's commencement of such Work Takeover. Upon receiving such written notice from EPA, the disbursement procedures set forth in Sections 4(a)-(e) above shall immediately be suspended, and the Trustee shall thereafter make payments from the Fund only to such person or persons as the EPA may direct in writing from time to time for the sole purpose of providing payment for performance of Work required by the Consent Decree. Further, after receiving such written notice from EPA, the Trustee shall not make any disbursements from the Fund at the request of the Grantor, including its representatives and/or contractors, or of any other person except at the express written direction of EPA. If EPA ceases such a Work Takeover in accordance with the terms of the Consent Decree, EPA shall so notify the Trustee in writing and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Sections 4(a)-(e) above shall be reinstated.

(g) While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

Section 5. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with directions which the Grantor may communicate in writing to the Trustee from time to time, except that:

(a) securities, notes, and other obligations of any person or entity shall not be acquired or held by the Trustee with monies comprising the Fund, unless they are securities, notes, or other obligations of the U.S. federal government or any U.S. state government or as otherwise permitted in writing by the EPA;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. federal or any U.S. state government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 6. Commingling and Investment. The Trustee is expressly authorized in its discretion to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

Section 7. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S.

federal government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the U.S. federal government.

Section 8. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of the Fund and this Trust shall be paid by the Grantor.

Section 9. Annual Valuation. The Trustee shall annually, no more than thirty (30) days after the anniversary date of establishment of the Fund, furnish to the Grantor and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as EPA may request from time to time.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its representation of the Trustee, serve as counsel to the Grantor.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor and as notified in writing to the Beneficiary.

Section 12. Trustee and Successor Trustee. The Trustee and any replacement Trustee must be approved in writing by EPA and must not be affiliated with the Grantor. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee approved in writing by EPA and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to EPA or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. the successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantor, the Beneficiary, and the present Trustee by certified mail no less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 8.

Section 13. Instructions to the Trustee. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended only by an instrument in writing executed by the Grantor and the Trustee, and with the prior written consent of EPA.

Section 15. Irrevocability and Termination. This Trust shall be irrevocable and shall continue until terminated upon the earlier to occur of (a) the written direction of EPA to terminate, consistent with the terms of the Consent Decree and (b) the complete exhaustion of the Fund comprising the Trust as certified in writing by the Trustee to EPA and the Grantor. Upon termination of the Trust pursuant to Section 15(a), all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Kansas.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 19. Notices. All notices and other communications given under this Agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantor, to _____.

(b) If to the Trustee, to _____.

(c) If to EPA, to EPA Region 7, Remedial Project Manager for the Site, Superfund Division, and to EPA Region 7, Office of Regional Counsel contact for the Site, both at 901 N. 5th Street, Kansas City, Kansas 66101.

In Witness Whereof, the parties hereto have caused this Agreement to be executed by their respective officers duly authorized and attested as of the date first above written:

GRANTOR

Signature of Grantor: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Grantor, Blue Tee Corp., described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

TRUSTEE

Signature of Trustee: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Trustee, _____, described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

Appendix D3

TRUST AGREEMENT

Cherokee County, Kansas Superfund Site
Treece Subsite
The Doe Run Resources Corporation--Robinson Parcel

Dated:_____, _____

This trust Agreement (this "Agreement") is entered into as of _____ by and between The Doe Run Resources Corporation, a corporation organized and existing under the laws of the State of New York (the "Grantor" or "Doe Run"), and Marshall & Ilsley Trust Company N.A. a trust company chartered under the laws of the United States (the "Trustee").

WHEREAS, the United States Environmental Protection Agency ("EPA"), an agency of the United States federal government and the Grantor have entered into a Consent Decree, United States of America v. Blue Tee Corp. et al., Civil Action No. _____, for the Cherokee County, Kansas Superfund Site, Treece Subsite (hereinafter the "Consent Decree");

WHEREAS, the Consent Decree provides that the Grantor shall provide assurance that funds will be available as and when needed for performance of the Work required by the Consent Decree;

WHEREAS, in order to provide such financial assurance, Grantor has agreed to establish and fund an environmental trust for the Robinson parcel for which for which Doe Run and Blue Tee Corp. are to jointly and severally perform the Work required by the Consent Decree;

WHEREAS, the trust created by this Agreement is intended, in conjunction with a similar trust entered into by Blue Tee Corp. and another trustee, to fulfill Doe Run's financial assurance obligation for the Work related to the Robinson parcel; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Beneficiary" shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term "Business Day" means any day, other than a Saturday or a Sunday, that banks are open for business in Kansas City, Kansas, USA.

(c) The term "Claim Certificate" shall have the meaning assigned thereto in Section 4(a) of this Agreement.

(d) The term "Fund" shall have the meaning assigned thereto in Section 3 of this Agreement.

(e) The term "Grantor" shall have the meaning assigned thereto in the first paragraph of this Agreement.

(f) The term "Objection Notice" shall have the meaning assigned thereto in Section 4(b) of this Agreement.

(g) The term "Robinson parcel" shall have the meaning assigned thereto in Section 2 of this Agreement.

(h) The term "Trust" shall have the meaning assigned thereto in Section 3 of this Agreement.

(i) The term "Trustee" shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(j) The term "Work" shall have the meaning assigned thereto in the Consent Decree.

Section 2. Identification of Facilities and Costs. This Agreement pertains to costs for Work related to the Robinson parcel in the Treece Subsite of the Cherokee County, Kansas Superfund Site in Cherokee County, Kansas consisting of the S 1/2 NW 1/4, Section 11, Township 35 S, Range 23 E; containing waste areas TX-30 and TC-4 ("the Robinson parcel") pursuant to the above referenced Consent Decree and Appendix C of that Consent Decree.

Section 3. Establishment of Trust Fund. The Grantor and the Trustee hereby establish a trust (the "Trust"), for the benefit of EPA (the "Beneficiary"), to assure that funds are available to pay for performance of the Work related to the Robinson parcel in the event that Grantor fails to conduct or complete the Work required by, and in accordance with the terms of, the Consent Decree. The Grantor and the Trustee intend that no third party shall have access to monies or other property in the Trust except as expressly provided herein. The Trust is established initially as consisting of funds in the amount of One Million Eight Hundred Sixty-Eight Thousand Four Hundred U.S. Dollars ($1,868,400). Such funds, along with any other monies and/or other property hereafter deposited into the Trust, and together with all earnings and profits thereon, are referred to herein collectively as the "Fund." The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor owed to the United States.

Section 4. Payment for Work Required Under the Consent Decree. The Trustee shall make payments from the Fund in accordance with the following procedures.

(a) From time to time, the Grantor and/or its representatives or contractors may request that the Trustee make payment from the Fund for Work related to the Robinson parcel

performed under the Consent Decree by delivering to the Trustee and EPA a written invoice and certificate (together, a "Claim Certificate") signed by an officer of the Grantor (or the relevant representative or contractor) and certifying:

(i) that the invoice is for Work performed related to the Robinson parcel in accordance with the Consent Decree;

(ii) a description of the Work that has been performed, the amount of the claim, and the identity of the payee(s); and

(iii) that the Grantor has sent a copy of such Claim Certificate to EPA, both to the EPA attorney and the EPA Remedial Project Manager at their respective addresses shown in this Agreement, the date on which such copy was sent, and the date on which such copy was received by EPA as evidenced by a return receipt (which return receipt may be written, as in the case of overnight delivery, certified mail, or other similar delivery methods, or electronic, as in the case of e-mail, facsimile, or other similar delivery methods).

(b) EPA may object to any payment requested in a Claim Certificate submitted by the Grantor (or its representatives or contractors), in whole or in part, by delivering to the Trustee a written notice (an "Objection Notice") within thirty (30) days after the date of EPA's receipt of the Claim Certificate as shown on the relevant return receipt. An Objection Notice sent by EPA shall state (i) whether EPA objects to all or only part of the payment requested in the relevant Claim Certificate; (ii) the basis for such objection; (iii) that EPA has sent a copy of such Objection Notice to the Grantor and the date on which such copy was sent; and (iv) the portion of the payment requested in the Claim Certificate, if any, which is not objected to by EPA, which undisputed portion the Trustee shall proceed to distribute in accordance with Section 4(d) below. EPA may object to a request for payment contained in a Claim Certificate only on the grounds

that the requested payment is either not for the costs of Work under the Consent Decree or is otherwise inconsistent with the terms and conditions of the Consent Decree.

(c) If the Trustee receives a Claim Certificate and does not receive an Objection Notice from EPA within the time period specified in Section 4(b) above, the Trustee shall, after the expiration of such time period, promptly make the payment from the Fund requested in such Claim Certificate.

(d) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, but which Objection Notice objects to only a portion of the requested payment, the Trustee shall, after the expiration of such time period, promptly make payment from the Fund of the uncontested amount as requested in the Claim Certificate. The Trustee shall not make any payment from the Fund for the portion of the requested payment to which EPA has objected in its Objection Notice.

(e) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, which Objection Notice objects to all of the requested payment, the Trustee shall not make any payment from the Fund for amounts requested in such Claim Certificate.

(f) If, at any time during the term of this Agreement, EPA implements a "Work Takeover" pursuant to the terms of the Consent Decree and intends to direct payment of monies from the Fund to pay for performance of Work during the period of such Work Takeover, EPA shall notify the Trustee in writing of EPA's commencement of such Work Takeover. Upon receiving such written notice from EPA, the disbursement procedures set forth in Sections 4(a)-(e) above shall immediately be suspended, and the Trustee shall thereafter make payments from the Fund only to such person or persons as the EPA may direct in writing from time to time for

the sole purpose of providing payment for performance of Work required by the Consent Decree. Further, after receiving such written notice from EPA, the Trustee shall not make any disbursements from the Fund at the request of the Grantor, including its representatives and/or contractors, or of any other person except at the express written direction of EPA. If EPA ceases such a Work Takeover in accordance with the terms of the Consent Decree, EPA shall so notify the Trustee in writing and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Sections 4(a)-(e) above shall be reinstated.

(g) While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

Section 5. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with directions which the Grantor may communicate in writing to the Trustee from time to time, except that:

(a) securities, notes, and other obligations of any person or entity shall not be acquired or held by the Trustee with monies comprising the Fund, unless they are securities, notes, or other obligations of the U.S. federal government or any U.S. state government or as otherwise permitted in writing by the EPA;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. federal or any U.S. state government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 6. Commingling and Investment. The Trustee is expressly authorized in its discretion to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

Section 7. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. federal government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking

institution affiliated with the Trustee, to the extent insured by an agency of the U.S. federal government.

Section 8. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of the Fund and this Trust shall be paid by the Grantor.

Section 9. Annual Valuation. The Trustee shall annually, no more than thirty (30) days after the anniversary date of establishment of the Fund, furnish to the Grantor and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as EPA may request from time to time.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its representation of the Trustee, serve as counsel to the Grantor.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor and as notified in writing to the Beneficiary.

Section 12. Trustee and Successor Trustee. The Trustee and any replacement Trustee must be approved in writing by EPA and must not be affiliated with the Grantor. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not

be effective until the Grantor has appointed a successor trustee approved in writing by EPA and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to EPA or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. the successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantor, the Beneficiary, and the present Trustee by certified mail no less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 8.

Section 13. Instructions to the Trustee. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended only by an instrument in writing executed by the Grantor and the Trustee, and with the prior written consent of EPA.

Section 15. Irrevocability and Termination. This Trust shall be irrevocable and shall continue until terminated upon the earlier to occur of (a) the written direction of EPA to terminate, consistent with the terms of the Consent Decree and (b) the complete exhaustion of

the Fund comprising the Trust as certified in writing by the Trustee to EPA and the Grantor. Upon termination of the Trust pursuant to Section 15(a), all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Kansas.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 19. Notices. All notices and other communications given under this Agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantor, to _____.

(b) If to the Trustee, to _____.

(c) If to EPA, to EPA Region 7, Remedial Project Manager for the Site, Superfund Division, and to EPA Region 7, Office of Regional Counsel contact for the Site, both at 901 N. 5th Street, Kansas City, Kansas 66101.

In Witness Whereof, the parties hereto have caused this Agreement to be executed by their respective officers duly authorized and attested as of the date first above written:

GRANTOR

Signature of Grantor: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Grantor, The Doe Run Resources Corporation, described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

TRUSTEE

Signature of Trustee: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Trustee, Marshall & Ilsley Trust Company N.A., described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

Appendix D4

TRUST AGREEMENT

Cherokee County, Kansas Superfund Site
Treece Subsite
Gold Fields Mining, LLC--Blue Diamond-Blue Mound Parcel

Dated:_____, _____

This trust Agreement (this "Agreement") is entered into as of _____ by and between Gold Fields Mining, LLC, a limited liability corporation organized and existing under the laws of the State of _____ (the "Grantor" or "Gold Fields"), and _____, a trust company chartered under the laws of the United States (the "Trustee").

WHEREAS, the United States Environmental Protection Agency ("EPA"), an agency of the United States federal government and the Grantor have entered into a Consent Decree, United States of America v. Blue Tee Corp. et al., Civil Action No. _____, for the Cherokee County, Kansas Superfund Site, Treece Subsite (hereinafter the "Consent Decree");

WHEREAS, the Consent Decree provides that the Grantor shall provide assurance that funds will be available as and when needed for performance of the Work required by the Consent Decree;

WHEREAS, in order to provide such financial assurance, Grantor has agreed to establish and fund an environmental trust for the Blue Diamond-Blue Mound parcel for which Gold Fields is to perform the Work required by the Consent Decree;

WHEREAS, the trust created by this Agreement is intended to fulfill Gold Fields' financial assurance obligation for the Work related to the Blue Diamond-Blue Mound parcel; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Beneficiary" shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term "Business Day" means any day, other than a Saturday or a Sunday, that banks are open for business in Kansas City, Kansas, USA.

(c) The term "Claim Certificate" shall have the meaning assigned thereto in Section 4(a) of this Agreement.

(d) The term "Fund" shall have the meaning assigned thereto in Section 3 of this Agreement.

(e) The term "Grantor" shall have the meaning assigned thereto in the first paragraph of this Agreement.

(f) The term "Objection Notice" shall have the meaning assigned thereto in Section 4(b) of this Agreement.

(g) The term "Blue Diamond-Blue Mound parcel" shall have the meaning assigned thereto in Section 2 of this Agreement.

(h) The term "Trust" shall have the meaning assigned thereto in Section 3 of this Agreement.

(i) The term "Trustee" shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(j) The term "Work" shall have the meaning assigned thereto in the Consent Decree.

Section 2. Identification of Facilities and Costs. This Agreement pertains to costs for Work related to the Blue Diamond-Blue Mound parcel in the Treece Subsite of the Cherokee County, Kansas Superfund Site in Cherokee County, Kansas consisting of Lots 1 and 2, N ½ NE ¼, Section 13, Township 35 S, Range 23 E; containing waste areas TX-27, TC-27,TC-45, TT-24, TT-25, TT-26, TT-28, TT-29, TT-45, and that part of TX-44 excluding Bingham ongoing commercial operations, ("Diamond-Blue Mound parcel") pursuant to the above referenced Consent Decree and Appendix C of that Consent Decree.

Section 3. Establishment of Trust Fund. The Grantor and the Trustee hereby establish a trust (the "Trust"), for the benefit of EPA (the "Beneficiary"), to assure that funds are available to pay for performance of the Work related to the Blue Diamond-Blue Mound parcel in the event that Grantor fails to conduct or complete the Work required by, and in accordance with the terms of, the Consent Decree. The Grantor and the Trustee intend that no third party shall have access to monies or other property in the Trust except as expressly provided herein. The Trust is established initially as consisting of funds in the amount of Seven Hundred Thousand U.S. Dollars ($700,000). Such funds, along with any other monies and/or other property hereafter deposited into the Trust, and together with all earnings and profits thereon, are referred to herein collectively as the "Fund." The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor owed to the United States.

Section 4. Payment for Work Required Under the Consent Decree. The Trustee shall make payments from the Fund in accordance with the following procedures.

(a) From time to time, the Grantor and/or its representatives or contractors may request that the Trustee make payment from the Fund for Work related to the Blue Diamond-Blue Mound parcel performed under the Consent Decree by delivering to the Trustee and EPA a written invoice and certificate (together, a "Claim Certificate") signed by an officer of the Grantor (or the relevant representative or contractor) and certifying:

(i) that the invoice is for Work performed related to the Blue Diamond-Blue Mound parcel in accordance with the Consent Decree;

(ii) a description of the Work that has been performed, the amount of the claim, and the identity of the payee(s); and

(iii) that the Grantor has sent a copy of such Claim Certificate to EPA, both to the EPA attorney and the EPA Remedial Project Manager at their respective addresses shown in this Agreement, the date on which such copy was sent, and the date on which such copy was received by EPA as evidenced by a return receipt (which return receipt may be written, as in the case of overnight delivery, certified mail, or other similar delivery methods, or electronic, as in the case of e-mail, facsimile, or other similar delivery methods).

(b) EPA may object to any payment requested in a Claim Certificate submitted by the Grantor (or its representatives or contractors), in whole or in part, by delivering to the Trustee a written notice (an "Objection Notice") within thirty (30) days after the date of EPA's receipt of the Claim Certificate as shown on the relevant return receipt. An Objection Notice sent by EPA shall state (i) whether EPA objects to all or only part of the payment requested in the relevant Claim Certificate; (ii) the basis for such objection; (iii) that EPA has sent a copy of such Objection Notice to the Grantor and the date on which such copy was sent; and (iv) the portion of the payment requested in the Claim Certificate, if any, which is not objected to by EPA, which

undisputed portion the Trustee shall proceed to distribute in accordance with Section 4(d) below. EPA may object to a request for payment contained in a Claim Certificate only on the grounds that the requested payment is either not for the costs of Work under the Consent Decree or is otherwise inconsistent with the terms and conditions of the Consent Decree.

(c) If the Trustee receives a Claim Certificate and does not receive an Objection Notice from EPA within the time period specified in Section 4(b) above, the Trustee shall, after the expiration of such time period, promptly make the payment from the Fund requested in such Claim Certificate.

(d) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, but which Objection Notice objects to only a portion of the requested payment, the Trustee shall, after the expiration of such time period, promptly make payment from the Fund of the uncontested amount as requested in the Claim Certificate. The Trustee shall not make any payment from the Fund for the portion of the requested payment to which EPA has objected in its Objection Notice.

(e) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, which Objection Notice objects to all of the requested payment, the Trustee shall not make any payment from the Fund for amounts requested in such Claim Certificate.

(f) If, at any time during the term of this Agreement, EPA implements a "Work Takeover" pursuant to the terms of the Consent Decree and intends to direct payment of monies from the Fund to pay for performance of Work during the period of such Work Takeover, EPA shall notify the Trustee in writing of EPA's commencement of such Work Takeover. Upon receiving such written notice from EPA, the disbursement procedures set forth in Sections 4(a)-

(e) above shall immediately be suspended, and the Trustee shall thereafter make payments from the Fund only to such person or persons as the EPA may direct in writing from time to time for the sole purpose of providing payment for performance of Work required by the Consent Decree. Further, after receiving such written notice from EPA, the Trustee shall not make any disbursements from the Fund at the request of the Grantor, including its representatives and/or contractors, or of any other person except at the express written direction of EPA. If EPA ceases such a Work Takeover in accordance with the terms of the Consent Decree, EPA shall so notify the Trustee in writing and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Sections 4(a)-(e) above shall be reinstated.

(g) While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

Section 5. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with directions which the Grantor may communicate in writing to the Trustee from time to time, except that:

(a) securities, notes, and other obligations of any person or entity shall not be acquired or held by the Trustee with monies comprising the Fund, unless they are securities, notes, or other obligations of the U.S. federal government or any U.S. state government or as otherwise permitted in writing by the EPA;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. federal or any U.S. state government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 6. Commingling and Investment. The Trustee is expressly authorized in its discretion to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

Section 7. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. federal government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the U.S. federal government.

Section 8. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of the Fund and this Trust shall be paid by the Grantor.

Section 9. Annual Valuation. The Trustee shall annually, no more than thirty (30) days after the anniversary date of establishment of the Fund, furnish to the Grantor and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as EPA may request from time to time.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its representation of the Trustee, serve as counsel to the Grantor.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor and as notified in writing to the Beneficiary.

Section 12. Trustee and Successor Trustee. The Trustee and any replacement Trustee must be approved in writing by EPA and must not be affiliated with the Grantor. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee approved in writing by EPA and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to EPA or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. the successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantor, the Beneficiary, and the present Trustee by certified mail no less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 8.

Section 13. Instructions to the Trustee. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended only by an instrument in writing executed by the Grantor and the Trustee, and with the prior written consent of EPA.

Section 15. Irrevocability and Termination. This Trust shall be irrevocable and shall continue until terminated upon the earlier to occur of (a) the written direction of EPA to terminate, consistent with the terms of the Consent Decree and (b) the complete exhaustion of the Fund comprising the Trust as certified in writing by the Trustee to EPA and the Grantor. Upon termination of the Trust pursuant to Section 15(a), all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Kansas.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 19. Notices. All notices and other communications given under this Agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantor, to _____.

(b) If to the Trustee, to _____.

(c) If to EPA, to EPA Region 7, Remedial Project Manager for the Site, Superfund Division, and to EPA Region 7, Office of Regional Counsel contact for the Site, both at 901 N. 5th Street, Kansas City, Kansas 66101.

In Witness Whereof, the parties hereto have caused this Agreement to be executed by their respective officers duly authorized and attested as of the date first above written:

GRANTOR

Signature of Grantor: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Grantor, Gold Fields Mining, LLC., described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____

TRUSTEE

Signature of Trustee: _____
Name and Title: _____

State of _____
County of _____

On this ____ day of _____, ____, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that she/he holds the title of _____ with the Trustee, _____, described in and which executed the above instrument; and that she/he signed her/his name thereto.

Notary Signature/Seal: _____