

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 5

\_\_\_\_\_  
IN THE MATTER OF: )

U.S. Smelter and Lead Refinery, Inc. )  
Site, East Chicago, Indiana )

U.S. Smelter and Lead Refinery, Inc. )

Respondent. )

Proceeding Under Sections 104, 107 )  
and 122 of the Comprehensive )  
Environmental Response, Compensation, )  
and Liability Act, 42 U.S.C. §§ 9604, )  
9607 and 9622. )  
\_\_\_\_\_ )

CERCLA Docket No. \_\_\_\_\_

**V-W-17-C-013**

**ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT  
FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY OF OPERABLE  
UNIT 2 OF THE U.S. SMELTER AND LEAD REFINERY, INC. SUPERFUND SITE**

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## **I. JURISDICTION AND GENERAL PROVISIONS**

1. This Remedial Investigation and Feasibility Study Administrative Settlement Agreement and Order on Consent (“RI/FS ASAOC”) is entered into voluntarily by the United States Environmental Protection Agency (“EPA”) and U.S. Smelter and Lead Refinery, Inc. (“USS Lead” or “Respondent”). Respondent is a wholly owned subsidiary of Mining Remedial Recovery Company (“MRRC”); MRRC is a wholly owned subsidiary of Arava Natural Resources Company, Inc. (“Arava”); Arava is a wholly owned subsidiary of Mueller Industries, Inc. (“Mueller”). This RI/FS ASAOC provides for the performance of a remedial investigation and feasibility study (“RI/FS”) by Respondent and the payment of certain response costs (“RI/FS Future Response Costs”) incurred by the United States at or in connection with Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site (the “Site”) in East Chicago, Indiana. To the extent provided by this RI/FS ASAOC, certain specified benefits of the settlement also extend to MRRC, Arava, and Mueller. A copy of this RI/FS ASAOC has been provided to the Indiana Department of Environmental Management (“IDEM”).

2. This RI/FS ASAOC is issued under the authority vested in the President of the United States by Sections 104, 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9607 and 9622 (CERCLA). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2923 (Jan. 29, 1987), and further delegated to Regional Administrators by EPA Delegation Nos. 14-14-C (Administrative Actions Through Consent Orders, Apr. 15, 1994) and 14-14-D (Cost Recovery Non-Judicial Agreements and Administrative Consent Orders, May 11, 1994). These authorities were further redelegated by the Regional Administrator of EPA Region 5 to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A, 14-14-C, and 14-14-D.

3. EPA and Respondent recognize that this RI/FS ASAOC has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this RI/FS ASAOC do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this RI/FS ASAOC, the validity of the findings of facts, conclusions of law, and determinations in Section IV (Findings of Fact) and V (Conclusions of Law and Determinations) of this RI/FS ASAOC. Respondent agrees to comply with and be bound by the terms of this RI/FS ASAOC and further agrees that they will not contest the basis or validity of this RI/FS ASAOC or its terms.

## **II. PARTIES BOUND**

4. This RI/FS ASAOC is binding upon EPA and upon Respondent and its successors and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent’s responsibilities under this RI/FS ASAOC.

5. Each undersigned representative of Respondent certifies that he or she is fully authorized to enter into the terms and conditions of this RI/FS ASAOC and to execute and legally bind Respondent to this RI/FS ASAOC.

6. Respondent shall provide a copy of this RI/FS ASAOC to each contractor hired to perform the RI/FS Work required by this RI/FS ASAOC and to each person representing any Respondent with respect to the Site or the RI/FS Work, and shall condition all contracts entered into under this RI/FS ASAOC upon performance of the RI/FS Work in conformity with the terms of this RI/FS ASAOC. Respondent or its contractors shall provide written notice of the RI/FS ASAOC to all subcontractors hired to perform any portion of the RI/FS Work required by this RI/FS ASAOC. Respondent shall nonetheless be responsible for ensuring that its contractors and subcontractors perform the RI/FS Work in accordance with the terms of this RI/FS ASAOC.

### **III. DEFINITIONS**

7. Unless otherwise expressly provided in this RI/FS ASAOC, terms used in this RI/FS ASAOC that 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 RI/FS ASAOC or its attached appendices, the following definitions shall apply:

a. “Additional Covered Persons” shall mean Arava Natural Resources Company, Inc., Mining Remedial Recovery Company, and Mueller Industries, Inc.

b. “Affected Property” shall mean all real property at the Site and any other real property where EPA determines, at any time, that access, land, water, or other resource use restrictions are needed to implement the RI/FS.

c. “Arava” shall mean Arava Natural Resources Company, Inc.

d. “CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§9601-9675.

e. “Day” or “day” shall mean a calendar day. In computing any period of time under this RI/FS ASAOC, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

f. “Effective Date” shall mean the effective date of this RI/FS ASAOC as provided in Section XXXII.

g. “EPA” shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

h. “EPA Hazardous Substance Superfund” shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. §9507.

i. “Former DuPont Facility” shall mean the facility that formerly housed operations including but not limited to the manufacture of lead arsenate, zinc oxide, and zinc chloride. The street address of the Former DuPont Facility is 5215 Kennedy Ave., East Chicago, Indiana.

j. “Former USS Lead Facility” shall mean the approximately 79 acre parcel of land that forms a part of Operable Unit 2 and that, from approximately 1906 to 1985, housed operations including but not limited to lead refining and secondary lead smelting. The street address of the Former USS Lead Facility is 5300 Kennedy Ave., East Chicago, Indiana.

k. “Institutional Controls” or “ICs” shall mean Proprietary Controls and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (a) limit land, water, or other resource use to minimize the potential for human exposure to Waste Material at or in connection with the Site; (b) limit land, water, or other resource use to implement, ensure non-interference with, or ensure the protectiveness of the response action pursuant to this RI/FS ASAOC; and/or (c) provide information intended to modify or guide human behavior at or in connection with the Site.

l. “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. Rates are available online at <https://www.epa.gov/superfund/superfund-interest-rates>.

m. “MRRC” shall mean Mining Remedial Recovery Company.

n. “Mueller” shall mean Mueller Industries, Inc.

o. “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.

p. “Non-Settling Owner” shall mean any person, other than a Respondent, that owns or controls any Affected Property. The clause “Non-Settling Owner’s Affected Property” means Affected Property owned or controlled by Non-Settling Owner.

q. “Operable Unit 1” or “OU1” shall mean the surface and subsurface soil of the area located inside the red highlighted boundaries on Appendix B. OU1 is generally bounded on the north by East Chicago Avenue; on the east by Parrish Avenue; on the south by East 151st Street/149th Place; and on the west by the Indiana Harbor Canal.

r. “Operable Unit 2” or “OU2” shall mean groundwater associated with the Site as well as the surface soil, subsurface soil, and sediments located inside the blue highlighted boundaries on Appendix B. The area within the blue highlighted boundaries on Appendix B consists of approximately 79 acres, is commonly known as 5300 Kennedy Avenue, and is generally bounded on the north by the Indiana Harbor Belt Railroad; on the east by Kennedy Avenue; on the south and west by the Grand Calumet River; and on the northwest by the Indiana Harbor Canal. The Former USS Lead Facility operated within Operable Unit 2.

s. “Owner Respondent” shall mean the Respondent. The clause “Owner Respondent’s Affected Property” means Affected Property owned or controlled by Owner Respondent.

- t. “Paragraph” shall mean a portion of this RI/FS ASAOC identified by an Arabic numeral or an upper or lower case letter.
- u. “Parties” shall mean EPA and Respondent.
- v. “Proprietary Controls” shall mean easements or covenants running with the land that (a) limit land, water, or other resource use and/or provide access rights and (b) are created pursuant to common law or statutory law by an instrument that is recorded in the appropriate land records office.
- w. “RCRA” shall mean the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992 (also known as the Resource Conservation and Recovery Act).
- x. “Respondent” or “USS Lead” shall mean U.S. Smelter and Lead Refinery, Inc.
- y. “RI/FS ASAOC” shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXX (Integration/Appendices)). In the event of conflict between this RI/FS ASAOC and any appendix, this RI/FS ASAOC shall control.
- z. “RI/FS Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs after the Effective Date of this RI/FS ASAOC in reviewing or developing deliverables submitted pursuant to this RI/FS ASAOC, in overseeing implementation of the RI/FS Work, or otherwise implementing, overseeing, or enforcing this RI/FS ASAOC, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section XI (Property Requirements) (including, but not limited to, cost of attorney time and any monies paid to secure or enforce access, including, but not limited to, the amount of just compensation), Section XV (Emergency Response and Notification of Releases), Paragraph 78 (RI/FS Work Takeover), Paragraph 101 (Access to Financial Assurance), including, but not limited to, the costs of any technical assistance grant under Section 117(e) of CERCLA, 42 U.S.C. § 9617(e), Section XVII (Dispute Resolution), and all litigation costs.
- aa. “RI/FS Work” shall mean all activities and obligations Respondent are required to perform under this RI/FS ASAOC and the attached RI/FS Statement of Work, except those required by Section XIII (Record Retention).
- bb. “Section” shall mean a portion of this RI/FS ASAOC identified by a Roman numeral.
- cc. “Site” shall mean the U.S. Smelter and Lead Refinery, Inc. Superfund Site located in the City of East Chicago, Lake County, Indiana, and depicted generally on the map attached as Appendix B. The Site includes both OU1 and OU2.
- dd. “State” shall mean the State of Indiana.

ee. “RI/FS Statement of Work” or “RI/FS SOW” shall mean the document describing the activities Respondent must perform to develop the RI/FS for Operable Unit 2 of the Site, as set forth in Appendix A to this RI/FS ASAOC. The RI/FS Statement of Work is incorporated into this RI/FS ASAOC and is an enforceable part of this RI/FS ASAOC as are any modifications made thereto in accordance with this RI/FS ASAOC.

ff. “Transfer” shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

gg. “United States” shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

hh. “USS Lead Sitewide Special Account” shall mean the special account, within the EPA Hazardous Substance Superfund, to be established pursuant to this RI/FS ASAOC by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3). This Special Account is associated with Site/Spill ID Number 053J.

ii. “Waste Material” shall mean (i) any “hazardous substance” under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or under Indiana Code 13-11-2-98; (ii) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33), or under Indiana Code 13-11-2-42; (iii) any “solid waste” under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27), or under Indiana Code 13-11-2-205; (iv) any “hazardous material” under Indiana Code 13-11-2-96(b); and (v) any “hazardous waste” under Indiana Code 13-11-2-99(c).

#### **IV. FINDINGS OF FACT**

8. EPA hereby makes the following findings of fact:

a. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, 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 April 9, 2009, 74 Fed. Reg. 16,126–34.

b. The Site consists of two Operable Units: OU1 and OU2, both defined above.

c. In response to a release or a substantial threat of a release of hazardous substances at or from OU1 of the Site, EPA commenced, in June 2009, a Remedial Investigation and Feasibility Study (RI/FS) of OU1 of the Site pursuant to 40 C.F.R. § 300.430.

d. EPA completed a Remedial Investigation (RI) Report and a Feasibility Study (“FS”) Report of OU1 in June 2012.

e. The decision by EPA on the remedial action to be implemented at OU1 of the Site is embodied in a final Record of Decision (ROD), executed on November 30, 2012, on which the State has given its concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b).

f. Operable Unit 1 consists generally of a residential neighborhood. In 2014, EPA divided OU1 into three “zones”: Zones 1, 2 and 3. A map depicting the three Zones is attached as Appendix C.

g. Between approximately 1906 and 1985, the Former USS Lead Facility processed and refined significant quantities of lead and other metals and chemicals, including arsenic.

h. Between approximately 1912 and 1954, facilities in Zone 1 of the Site also processed and refined significant quantities of lead and other metals and chemicals, including arsenic.

i. Between approximately 1893 and 2000, the DuPont Facility, located immediately south of Zone 3 of the Site, processed a significant quantity of metals and other chemicals primarily in the production of various inorganic acids and organic and inorganic chemicals, including lead arsenate, and zinc chloride. For much of the time, the DuPont Facility was owned and operated by the E. I. DuPont de Nemours and Company (“Dupont”). The Chemours Company (“Chemours”) assumed ownership of the facility in 2015.

j. Lead has been identified in the soil, and arsenic has been identified in the soil and groundwater, at the facilities identified in Paragraphs 8.g–8.i and in the surrounding area. Only a limited investigation into groundwater conditions has been performed in the residential neighborhood that comprises OU1.

k. On April 10, 1990, Respondent and the Indiana Department of Environmental Management (“IDEM”) entered into a Partial Interim Agreed Order for Cause No. N-296, for remediation and closure of the Former USS Lead Facility.

l. On November 18, 1993, Respondent and EPA entered into an Administrative Order on Consent (“AOC”) pursuant to Section 3008(h) of the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. § 6928(h), which required Respondent to implement, *inter alia*, Interim Stabilization Measures at the Former USS Lead Facility to relieve threats to human health or the environment.

m. On November 8, 1996, EPA designated a Corrective Action Management Unit (“CAMU”) at the Former USS Lead Facility. The CAMU, construction of which was overseen by federal authorities, includes a perimeter subsurface slurry wall, an engineered final cover, an inwardly induced hydraulic gradient, and a long-term ground-water monitoring system. The designation included a response to comments submitted during the public notice period.

n. Pursuant to the Partial Interim Agreed Order and the AOC, Respondent excavated lead-contaminated soils and point-source-discharge canal sediments from both on-site areas and limited off-site areas. Waste removed by these activities was consolidated in the on-site CAMU. Respondent also constructed additional physical barriers to protect surface water and limit contaminant exposure to ecological receptors.

o. Residual contamination from lead and other metals may remain in soil, wetlands, and other areas within the Former USS Lead Facility that may result in unacceptable



exposure of contaminants to human and ecological receptors. Groundwater samples upgradient of the CAMU also show arsenic at levels above the Maximum Contaminant Level (“MCL”), indicating a possible off-site source of groundwater contamination.

p. On June 6, 2005, as part of a closure plan developed with and approved by IDEM, Respondent executed an environmental restrictive covenant which implemented institutional controls at the Former USS Lead Facility. Those institutional controls prohibit, *inter alia*, any activity that will impact, damage or threaten the integrity of the CAMU, the subsurface slurry wall, or the monitoring wells installed around the CAMU.

q. On December 14, 2007, IDEM issued a Post-Closure Permit for the CAMU, which required Respondent to establish a trust fund for continued maintenance of and monitoring at the Former USS Lead Facility. In 2009, EPA terminated its AOC with Respondent.

r. On February 15, 2017, the East Chicago Housing Authority (“ECHA”) finalized its Phase II Environmental Site Assessment for the West Calumet Housing Complex located in Zone 1 of the Site. Groundwater sampling results from the Phase II primarily show arsenic, lead, chromium, and benz(a)anthracene contamination present above IDEM Remediation Closure Guide residential tap screening levels.

s. On June 17, 1997, DuPont and EPA entered into a RCRA Corrective Action Administrative Order on Consent to determine the nature and extent of any releases of hazardous waste and/or hazardous constituents at or from the Former DuPont Facility, and to address such releases as appropriate. Contamination at the Former Dupont Facility is being addressed under this Corrective Action Order.

t. In 2002, DuPont installed a permeable reactive barrier (“PRB”) near the northern facility boundary to address arsenic-contaminated groundwater coming off the Former DuPont Facility. Nonetheless, groundwater sampling results from the northern edge of the Former DuPont Facility continue to show levels of arsenic above the MCL. Groundwater monitored at these wells is expected to be captured by the municipal sewer system. However, EPA has not verified the extent of capture, and sampling results from the area north of the Former DuPont Facility (Zone 3) show arsenic in groundwater above the MCL.

u. Groundwater under the Site is not currently used as a source for drinking water. Instead, Lake Michigan is the source of drinking water for residents of the Site. EPA has not yet identified a path for human exposure to unsafe amounts of lead and arsenic from the groundwater. EPA anticipates additional corrective action by Chemours to address contaminated groundwater coming from the Former Dupont Facility. However, the persistence of groundwater contamination under the Site requires additional sampling and analysis to evaluate the potential for human exposure.

v. Lead is a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include

residents, with a particular concern for children six years of age and under and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

w. Arsenic is a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of “pins and needles” in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small “corns” or “warts” on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

## **V. CONCLUSIONS OF LAW AND DETERMINATIONS**

9. Based on the Findings of Fact set forth above, and the administrative record, EPA has determined that:

a. The U.S. Smelter and Lead Refinery, Inc. Site is a “facility” as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. The contamination found at the Site, as identified in the Findings of Fact above, includes “hazardous substances” as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

c. Respondent is a “person” as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

d. Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a) because Respondent is the “owner(s)” and/or “operator(s)” of the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

e. The conditions described in Paragraphs 8.j, 8.o, and 8.t of the Findings of Fact above constitute an actual and/or threatened “release” of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

f. The actions required by this RI/FS ASAOC are necessary to protect the public health, welfare, or the environment, are in the public interest, 42 U.S.C. § 9622(a), are

consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

g. EPA has determined that Respondent is qualified to conduct the RI/FS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the RI/FS Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondent comply with the terms of this RI/FS ASAOC.

## **VI. SETTLEMENT AGREEMENT AND ORDER**

10. Based upon the Findings of Fact, Conclusions of Law and Determinations set forth above, and the administrative record, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this RI/FS ASAOC, including, but not limited to, all appendices to this RI/FS ASAOC and all documents incorporated by reference into this RI/FS ASAOC.

## **VII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS**

11. **Selection of Contractors, Personnel.** All RI/FS Work performed under this RI/FS ASAOC shall be under the direction and supervision of qualified personnel. Within 30 days after the Effective Date, and before the RI/FS Work outlined below begins, Respondent shall notify EPA in writing of the names, titles, addresses, telephone numbers, email addresses, and qualifications of the personnel, including contractors, subcontractors, consultants, and laboratories to be used in carrying out such RI/FS Work. If, after the commencement of RI/FS Work, Respondent retains additional contractors or subcontractors, Respondent shall notify EPA of the names, titles, contact information, and qualifications of such contractors or subcontractors retained to perform the RI/FS Work at least 10 days prior to commencement of RI/FS Work by such additional contractors or subcontractors. EPA retains the right, at any time, to disapprove of any or all of the contractors and/or subcontractors retained by Respondent. If EPA disapproves of a selected contractor or subcontractor, Respondent shall retain a different contractor or subcontractor and shall notify EPA of that contractor's or subcontractor's name, title, contact information, and qualifications within 30 days after EPA's disapproval. With respect to any proposed contractor, Respondent shall demonstrate that the proposed contractor demonstrates compliance with ASQ/ANSI E4:2014 "Quality management systems for environmental information and technology programs – Requirements with guidance for use" (American Society for Quality, February 2014), 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 (Reissued May 2006) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the RI/FS Work for Respondent shall be subject to EPA's review for verification based on objective assessment criteria (e.g., experience, capacity, technical expertise) and that they do not have a conflict of interest with respect to the project.

12. Within 30 days after the Effective Date, Respondent shall designate a Project Coordinator who shall be responsible for administration of the RI/FS Work required by this RI/FS ASAOC and shall submit to EPA the designated Project Coordinator's name, title, address, telephone number, email address, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during the RI/FS Work. EPA

retains the right to disapprove of a designated Project Coordinator who does not meet the requirements of Paragraph 11 (Selection of Contractors, Personnel). If EPA disapproves of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name, title, contact information, and qualifications within 15 days following EPA's disapproval. Notice or communication relating to this RI/FS ASAOC from EPA to Respondent's Project Coordinator shall constitute notice or communication to Respondent.

13. EPA has designated Katherine Thomas, Remedial Project Manager of the Region 5 Superfund Division, as its Project Coordinator. EPA will notify Respondent of a change of its designated Remedial Project Manager. Communications between Respondent and EPA, and all documents concerning the activities performed pursuant to this RI/FS ASAOC, shall be directed to the EPA Remedial Project Manager in accordance with Paragraph 21.a.

14. EPA's Remedial Project Manager shall have the authority lawfully vested in a Remedial Project Manager (RPM) and On-Scene Coordinator (OSC) by the NCP. In addition, EPA's Remedial Project Manager shall have the authority, consistent with the NCP, to halt, conduct, or direct any RI/FS Work required by this RI/FS ASAOC, or to direct any other response action when s/he determines that conditions at the Site constitute an emergency situation or may present a threat to public health or welfare or the environment. Absence of the EPA Remedial Project Manager from the area under study pursuant to this RI/FS ASAOC shall not be cause for stoppage or delay of RI/FS Work.

## **VIII. WORK TO BE PERFORMED**

15. For any regulation or guidance referenced in the RI/FS ASAOC, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the RI/FS Work only after Respondent receives notification from EPA of the modification, amendment, or replacement.

16. Respondent shall conduct the RI/FS and prepare all plans in accordance with the provisions of this RI/FS ASAOC, the attached RI/FS SOW, CERCLA, the NCP, and EPA guidance, including, but not limited to the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" ("RI/FS Guidance"), OSWER Directive # 9355.3-01 (October 1988), available at <https://semspub.epa.gov/src/document/11/128301>, "Guidance for Data Useability in Risk Assessment (Part A), Final," OSWER Directive #9285.7-09A, PB 92-963356 (April 1992), available at <http://semspub.epa.gov/src/document/11/156756>, and guidance referenced therein, and guidance referenced in the RI/FS SOW. The Remedial Investigation (RI) shall consist of collecting data to characterize site conditions, determining the nature and extent of the contamination at or from OU2 of the Site, assessing risk to human health and the environment, and conducting treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies that are being considered. The Feasibility Study (FS) shall determine and evaluate (based on treatability testing, where appropriate) alternatives for remedial action to prevent, mitigate, or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from OU2 of the Site. The alternatives evaluated must include, but shall not be limited to, the range of

alternatives described in the NCP, 40 C.F.R. § 300.430(e), and shall include remedial actions that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In evaluating the alternatives, Respondent shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U.S.C. § 9621, and 40 C.F.R. § 300.430(e).

17. All written documents prepared by Respondent pursuant to this RI/FS ASAOC shall be submitted by Respondent in accordance with Section IX (Submission and Approval of Deliverables). With the exception of progress reports and the Health and Safety Plan, all such submittals will be reviewed and approved by EPA in accordance with Section IX (Submission and Approval of Deliverables). Respondent shall implement all EPA approved, conditionally-approved, or modified deliverables.

**18. Modification of the RI/FS Work Plan**

a. If at any time during the RI/FS process, Respondent identifies a need for additional data, Respondent shall submit a memorandum documenting the need for additional data to EPA's Remedial Project Manager within 15 days after identification. EPA in its discretion will determine whether the additional data will be collected by Respondent and whether it will be incorporated into deliverables.

b. In the event of unanticipated or changed circumstances at OU2 of the Site, Respondent shall notify EPA's Remedial Project Manager by telephone within 24 hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the unanticipated or changed circumstances warrant changes in the RI/FS Work Plan, EPA shall modify the RI/FS Work Plan in writing accordingly or direct Respondent to modify and submit the modified RI/FS Work Plan to EPA for approval. Respondent shall perform the RI/FS Work Plan as modified.

c. EPA may determine that, in addition to tasks defined in the initially approved RI/FS Work Plan, other additional work may be necessary to accomplish the objectives of the RI/FS. Subject to Paragraph 18.d, Respondent shall perform these response actions in addition to those required by the initially approved RI/FS Work Plan, including any approved modifications, if EPA determines that such actions are necessary for a thorough RI/FS.

d. Respondent shall confirm their willingness to perform the additional work in writing to EPA within 7 days after receipt of the EPA request. If Respondent objects to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondent may seek dispute resolution pursuant to Section XVII (Dispute Resolution). The RI/FS SOW and/or RI/FS Work Plan shall be modified in accordance with the final resolution of the dispute.

e. Respondent shall complete the additional work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the RI/FS Work Plan or written RI/FS Work Plan supplement. EPA reserves the right to conduct the work itself, to seek reimbursement from Respondent for the costs incurred in performing the work, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

## 19. **Off-Site Shipments**

a. Respondent may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondent obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

b. Respondent may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide written notice to the appropriate state environmental official in the receiving facility's state and to EPA's Remedial Project Manager. This notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondent shall also notify the state environmental official referenced above and EPA's Remedial Project Manager of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondent shall provide the written notice after the award of the contract for the RI/FS and before the Waste Material is shipped.

c. Respondent may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the RI/FS SOW. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 C.F.R. § 261.4(e) shipped off-Site for treatability studies, are not subject to 40 C.F.R. § 300.440.

20. **Meetings.** Respondent shall make presentations at, and participate in, meetings at the request of EPA during the preparation of the RI/FS. In addition to discussion of the technical aspects of the RI/FS, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

## **IX. SUBMISSION AND APPROVAL OF DELIVERABLES**

### 21. **Submission of Deliverables**

#### a. **General Requirements for Deliverables**

(1) Except as otherwise provided in this RI/FS ASAOC, Respondent shall direct all submissions required by this RI/FS ASAOC and the RI/FS SOW to EPA's Remedial Project Manager at

Katherine Thomas  
EPA Remedial Project Manager  
Region 5, US EPA  
77 W. Jackson Blvd. (SR-6J)  
Chicago, IL 60604-3590  
Phone: (312) 353-5878  
Email: [thomas.katherine@epa.gov](mailto:thomas.katherine@epa.gov)

and to the State at

Doug Petroff  
Project Manager, Federal Programs  
Indiana Department of Environmental Management  
100 North Senate Ave.  
IGCN – 11<sup>th</sup> Floor  
Indianapolis, IN 46204  
Phone: (317) 234-7179  
Email: [dpetroff@idem.IN.gov](mailto:dpetroff@idem.IN.gov)

Respondent shall submit all deliverables required by this RI/FS ASAOC, the RI/FS SOW, or any approved work plan in accordance with the schedule set forth in such plan.

(2) Respondent shall submit all deliverables in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in Paragraph 21.b. All other deliverables shall be submitted in the electronic form specified by EPA's Remedial Project Manager. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5 x 11 inches, Respondent shall also provide paper copies of such exhibits.

**b. Technical Specifications for Deliverables**

(1) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable (EDD) format. Respondent shall consult with EPA's Remedial Project Manager prior to transmitting sampling and monitoring data in order to be advised of the EDD format that the data should be transmitted in. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(2) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (i) in the ESRI File Geodatabase format; and (ii) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be

compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://edg.epa.gov/EME/>.

(3) Each file must include an attribute name for each site unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.

(4) Spatial data submitted by Respondent does not, and is not intended to, define the boundaries of the Site.

## 22. **Approval of Deliverables**

### a. **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under this RI/FS ASAOC, or the attached RI/FS SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the RI/FS Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

b. **Resubmissions.** Upon receipt of a notice of disapproval under Paragraph 22.a(1) (Initial Submissions), or if required by a notice of approval upon specified conditions under Paragraph 22.a(1), Respondent shall, within 14 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (a) approve, in whole or in part, the resubmission; (b) approve the resubmission upon specified conditions; (c) modify the resubmission; (d) disapprove, in whole or in part, the resubmission, requiring Respondent to correct the deficiencies; or (e) any combination of the foregoing.

c. **Implementation.** Upon approval, approval upon conditions, or modification by EPA under Paragraph 22.a (Initial Submissions) or Paragraph 22.b (Resubmissions), of any deliverable, or any portion thereof: (i) such deliverable, or portion thereof, will be incorporated into and enforceable under the RI/FS ASAOC; and (ii) Respondent shall take any action required by such deliverable, or portion thereof. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for penalties under Section XIX (Stipulated Penalties) for violations of this RI/FS ASAOC.



23. Notwithstanding the receipt of a notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA.

24. In the event that EPA takes over some of the tasks, but not the preparation of the Remedial Investigation Report (“RI Report”) or the FS Report, Respondent shall incorporate and integrate information supplied by EPA into those reports.

25. Respondent shall not proceed with any activities or tasks dependent on the following deliverables until receiving EPA approval, approval on condition, or modification of such deliverables: RI/FS Work Plan; Sampling and Analysis Plan; draft RI Report; Treatability Testing Work Plan; Treatability Testing Sampling and Analysis Plan; Treatability Testing Health and Safety Plan; and draft FS Report. While awaiting EPA approval, approval on condition, or modification of these deliverables, Respondent shall proceed with all other tasks and activities that may be conducted independently of these deliverables, in accordance with the schedule set forth under this RI/FS ASAOC.

26. For all remaining deliverables not listed in Paragraph 25, Respondent shall proceed with all subsequent tasks, activities, and deliverables without awaiting EPA approval of the submitted deliverable. EPA reserves the right to stop Respondent from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the RI/FS Work.

27. **Material Defects.** If an initially submitted or resubmitted plan, report, or other deliverable contains a material defect, and the plan, report, or other deliverable is disapproved or modified by EPA under Paragraph 22.a (Initial Submissions) or 22.b (Resubmissions) due to such material defect, Respondent shall be deemed in violation of this RI/FS ASAOC for failure to submit such plan, report, or other deliverable timely and adequately. Respondent may be subject to penalties for such violation as provided in Section XIX (Stipulated Penalties).

28. Neither failure of EPA to expressly approve or disapprove of Respondent’s submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA.

## **X. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS**

29. Respondent shall use quality assurance, quality control, and other technical activities and chain of custody procedures for all samples consistent with “EPA Requirements for Quality Assurance Project Plans (QA/R5),” EPA/240/B-01/003 (March 2001, reissued May 2006), “Guidance for Quality Assurance Project Plans (QA/G-5),” EPA/240/R-02/009 (December 2002), and “Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A-900C (March 2005).

### **30. Laboratories**

a. Respondent shall ensure that EPA personnel and its authorized representatives are allowed access at reasonable times to all laboratories utilized by Respondent pursuant to this RI/FS ASAOC. In addition, Respondent shall ensure that such laboratories shall

analyze all samples submitted by EPA pursuant to the Quality Assurance Project Plan (QAPP) for quality assurance, quality control, and technical activities that will satisfy the stated performance criteria as specified in the QAPP and that sampling and field activities are conducted in accordance with EPA's "Field Operations Group Operational Guidelines for Field Activities"

(<http://www.epa.gov/region8/qa/FieldOperationsGroupOperationalGuidelinesForFieldActivities.pdf>) and "EPA QA Field Activities Procedure" CIO 2105-P-02.1 (9/23/2014), available at <https://www.epa.gov/irmpoli8/epa-qa-field-activities-procedures>. Respondent shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this RI/FS ASAOC meet the competency requirements set forth in EPA's "Policy to Assure Competency of Laboratories, Field Sampling, and Other Organizations Generating Environmental Measurement Data under Agency-Funded Acquisitions," available at <https://www.epa.gov/measurements/documents-about-measurement-competency-under-acquisition-agreements>, and that the laboratories perform all analyses using EPA-accepted methods. Accepted EPA methods consist of, but are not limited to, methods that are documented in the EPA's Contract Laboratory Program (<https://www.epa.gov/superfund/programs/clp/>), SW 846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (<https://www.epa.gov/hw-sw846>), "Standard Methods for the Examination of Water and Wastewater" (<http://www.standardmethods.org/>), and 40 C.F.R. Part 136, "Air Toxics - Monitoring Methods" (<https://www.epa.gov/ttnamti1/airtox.html>).

b. Upon approval by EPA, Respondent may use other appropriate analytical methods, as long as (i) quality assurance/quality control (QA/QC) criteria are contained in the methods and the methods are included in the QAPP, (ii) the analytical methods are at least as stringent as the methods listed above, and (iii) the methods have been approved for use by a nationally recognized organization responsible for verification and publication of analytical methods, e.g., EPA, ASTM, NIOSH, OSHA, etc.

c. Respondent shall ensure that all laboratories they use for analysis of samples taken pursuant to this RI/FS ASAOC have a documented Quality System that complies with ASQ/ANSI E4:2014 "Quality Management Systems for Environmental Information and Technology Programs – Requirements With Guidance for Use" (American Society for Quality, February 2014), and "EPA Requirements for Quality Management Plans (QA/R-2)" EPA/240/B-01/002 (March 2001, reissued May 2006), or equivalent documentation as determined by EPA. EPA may consider Environmental Response Laboratory Network (ERLN) laboratories, laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP), or laboratories that meet International Standardization Organization (ISO 17025) standards or other nationally recognized programs as meeting the Quality System requirements.

d. Respondent shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this RI/FS ASAOC are conducted in accordance with the procedures set forth in the approved QAPP.

### 31. **Sampling**

a. Upon request, Respondent shall provide split or duplicate samples to EPA or its authorized representatives. Respondent shall notify EPA not less than 7 days in advance of

any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall provide to Respondent split or duplicate samples of any samples it takes as part of EPA's oversight of Respondent's implementation of the RI/FS Work, and any such samples shall be analyzed in accordance with the approved QAPP.

b. Respondent shall submit to EPA, in the next monthly progress report as described in Task 8 of RI/FS SOW (Progress Reports) the results of all sampling and/or tests or other data obtained or generated by or on behalf of Respondent with respect to OU2 of the Site and/or the implementation of this RI/FS ASAOC.

c. Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance or oversight of the RI/FS Work that has been verified according to the quality assurance/quality control (QA/QC) procedures required by the RI/FS ASAOC or any EPA-approved RI/FS Work Plans or Sampling and Analysis Plans. If Respondent objects to any other data relating to the RI/FS, Respondent shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days after the monthly progress report containing the data.

## **XI. PROPERTY REQUIREMENTS**

### **32. Agreements Regarding Access and Non-Interference.**

a. With respect to any Non-Settling Owner's Affected Property, Respondent shall use best efforts to secure from such Non-Settling Owner an agreement, enforceable by Respondent and the United States, providing that such Non-Settling Owner shall: (i) provide EPA and its representatives, contractors, and subcontractors with access at all reasonable times to such Affected Property to conduct any activity regarding the RI/FS ASAOC, including those listed in Paragraph 33 (Access Requirements); and (ii) refrain from using such Affected Property in any manner that EPA determines will interfere with or adversely affect the implementation or integrity of the RI/FS Work.

b. With respect to Respondent's Affected Property, Respondent shall: (i) provide EPA and its representatives, contractors, and subcontractors with access at all reasonable times to such Affected Property to conduct any activity regarding the RI/FS ASAOC, including those listed in Paragraph 33 (Access Requirements); and (ii) refrain from using such Affected Property in any manner that EPA determines will interfere with or adversely affect the implementation or integrity of the RI/FS Work.

33. **Access Requirements.** The following is a list of activities for which access is required regarding the Affected Property:

- a. Monitoring the RI/FS Work;
- b. Verifying any data or information submitted to EPA;
- c. Conducting investigations regarding contamination at or near the Site;

- d. Obtaining samples;
- e. Assessing the need for, planning, implementing, or monitoring response actions;
- f. Assessing implementation of quality assurance and quality control practices as defined in the approved QAPP;
- g. Implementing the RI/FS Work pursuant to the conditions set forth in Paragraph 78 (RI/FS Work Takeover);
- h. Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Respondent or its agents, consistent with Section XII (Access to Information);
- i. Assessing Respondent's compliance with the RI/FS ASAOC;
- j. Determining whether the Affected Property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the RI/FS ASAOC; and
- k. Implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions regarding the Affected Property.

34. **Best Efforts.** As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Respondent would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements, as required by this Section. If Respondent is unable to accomplish what is required through "best efforts" in a timely manner, Respondent shall notify EPA and include a description of the steps taken to comply with the requirements. If EPA deems it appropriate, it may assist Respondent, or take independent action, in obtaining such access and/or use restrictions. All costs incurred by the United States in providing such assistance or taking such action, including the cost of attorney time and the amount of monetary consideration or just compensation paid, constitute RI/FS Future Response Costs to be reimbursed under Section XVI (Payment of Future Response Costs).

35. If EPA determines in a decision document prepared in accordance with the NCP that Institutional Controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are needed, Respondent shall cooperate with EPA's efforts to secure and ensure compliance with such Institutional Controls.

36. In the event of any Transfer of the Affected Property, unless EPA otherwise consents in writing, Respondent shall continue to comply with their obligations under the RI/FS ASAOC, including their obligation to secure access and ensure compliance with any land, water, or other resource use restrictions regarding the Affected Property.

37. Notwithstanding any provision of the RI/FS ASAOC, EPA and the State retain all of their access authorities and rights, as well as all of their rights to require land, water, or other

resource use restrictions, including enforcement authorities related thereto under CERCLA, RCRA, and any other applicable statute or regulations.

## **XII. ACCESS TO INFORMATION**

38. Respondent shall provide to EPA, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as “Records”) within Respondent’s possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this RI/FS ASAOC, 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 regarding the RI/FS Work. Respondent 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 RI/FS Work.

### **39. Privileged and Protected Claims**

a. Respondent may assert that all or part of a Record requested by EPA is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondent comply with Paragraph 39.b, and except as provided in Paragraph 39.c.

b. If Respondent assert a claim of privilege or protection, they shall provide EPA and the State with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record’s contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, Respondent shall provide the Record to EPA in redacted form to mask the privileged or protected portion only. Respondent shall retain all Records that they claim to be privileged or protected until EPA has had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Respondent’s favor.

c. Respondent may make no claim of privilege or protection regarding: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the Site; or (2) the portion of any Record that Respondent are required to create or generate pursuant to this RI/FS ASAOC.

40. **Business Confidential Claims.** Respondent may assert that all or part of a Record provided to EPA under this Section or Section XIII (Record Retention) is business confidential 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). Respondent shall segregate and clearly identify all Records or parts thereof submitted under this RI/FS ASAOC for which Respondent asserts business confidentiality claims. Records claimed as confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA, or if EPA has notified Respondent that the Records 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 Records without further notice to Respondent.

41. Notwithstanding any provision of this RI/FS ASAOC, EPA retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

### **XIII. RECORD RETENTION**

42. Until 10 years after EPA provides Respondent with notice, pursuant to Section XXIX (Notice of Completion of RI/FS Work), that all RI/FS Work has been fully performed in accordance with this RI/FS ASAOC, each Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control, or that come into its possession or control, that relate in any manner to its liability under CERCLA with regard to the Site, provided, however, that Respondent must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Respondent 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 last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the RI/FS Work, provided, however, that Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the RI/FS Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

43. At the conclusion of the document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such Records, and, upon request by EPA, and except as provided in Paragraph 39 (Privileged and Protected Claims), Respondent shall deliver any such Records to EPA.

44. Respondent certifies 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 (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the State and that it has fully complied with any and all EPA and State requests for information regarding the Site pursuant to Sections 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, and state law.

### **XIV. COMPLIANCE WITH OTHER LAWS**

45. Nothing in this RI/FS ASAOC limits Respondent's obligations to comply with the requirements of all applicable state and federal laws and regulations when performing the RI/FS. No local, state, or federal permit shall be required for any portion of the RI/FS 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 RI/FS Work), including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the RI/FS Work that is not on-site requires a federal or state permit or

approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. Respondent may seek relief under the provisions of Section XVIII (Force Majeure) for any delay in the performance of the RI/FS Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval required for the RI/FS Work, provided that they have submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals. This RI/FS ASAOC is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

## **XV. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES**

46. **Emergency Response.** If any event occurs during performance of the RI/FS Work that causes or threatens to cause a release of Waste Material on, at, or from the Site that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release. Respondent shall take these actions in accordance with all applicable provisions of this RI/FS ASAOC, including, but not limited to, the Health and Safety Plan. Respondent shall also immediately notify EPA's Remedial Project Manager or, in the event of his/her unavailability, the Regional Duty Officer at 312-353-2000 of the incident or Site conditions. In the event that Respondent fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA for all costs of such response action not inconsistent with the NCP pursuant to Section XVI (Payment of RI/FS Future Response Costs).

47. **Release Reporting.** Upon the occurrence of any event during performance of the RI/FS Work that Respondent is required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondent shall immediately orally notify EPA's Remedial Project Manager or, in the event of his/her unavailability, the Regional Duty Officer at 312-353-2000, and the National Response Center at (800) 424-8802. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004.

48. For any event covered under this Section, Respondent shall submit a written report to EPA within 7 days after the onset of such event, setting forth the action or event that occurred and the measures taken, and to be taken, to mitigate any release or threat of release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release or threat of release.

## **XVI. PAYMENT OF RI/FS FUTURE RESPONSE COSTS**

49. **Payment of RI/FS Future Response Costs.** Respondent shall pay to EPA all RI/FS Future Response Costs not inconsistent with the NCP.

a. **Periodic Bill.** On a periodic basis, EPA will send Respondent a bill requiring payment that includes an Itemized Cost Summary, which includes direct and indirect

costs incurred by EPA, its contractors, subcontractors, and the United States Department of Justice. Respondent shall make all payments within 30 days after Respondent's receipt of each bill requiring payment, except as otherwise provided in Paragraph 52 (Contesting RI/FS Future Response Costs), and in accordance with Paragraphs 50.a and 50.b (Method of Payment).

b. **Deposit of RI/FS Future Response Costs Payments.** The total amount to be paid by Respondent pursuant to Paragraph 49.a (Periodic Bill) shall be deposited by EPA in the USS Lead Sitewide Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund, provided, however, that EPA may deposit a RI/FS Future Response Costs payment directly into the EPA Hazardous Substance Superfund if, at the time the payment is received, EPA estimates that the USS Lead Sitewide Special Account balance is sufficient to address currently anticipated future response actions to be conducted or financed by EPA at or in connection with the Site. Any decision by EPA to deposit a RI/FS Future Response Costs payment directly into the EPA Hazardous Substance Superfund for this reason shall not be subject to challenge by Respondent pursuant to the dispute resolution provisions of this RI/FS ASAOC or in any other forum.

50. **Method of Payment.**

a. Respondent shall make payment to EPA by Fedwire Electronic Funds Transfer (EFT) to:

Federal Reserve Bank of New York  
ABA = 021030004  
Account = 68010727  
SWIFT address = FRNYUS33  
33 Liberty Street  
New York, NY 10045  
Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall reference Site/Spill ID Number 053J and the EPA docket number for this action.

b. At the time of payment, Respondent shall send notice that payment has been made to the EPA Remedial Project Manager, and to the EPA Cincinnati Finance Office by email at [cinwd\\_acctsreceivable@epa.gov](mailto:cinwd_acctsreceivable@epa.gov), or by mail to

EPA Cincinnati Finance Office  
26 W. Martin Luther King Drive  
Cincinnati, Ohio 45268

Such notice shall reference Site/Spill ID Number 053J and the EPA docket number for this action.

51. **Interest.** In the event that any payment for RI/FS Future Response Costs is not made by the date required, Respondent shall pay Interest on the unpaid balance. The Interest on RI/FS Future Response Costs shall begin to accrue on the date of the bill. The Interest shall



accrue through the date of Respondent's payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XIX (Stipulated Penalties).

52. **Contesting RI/FS Future Response Costs.** Respondent may initiate the procedures of Section XVII (Dispute Resolution) regarding payment of any RI/FS Future Response Costs billed under Paragraph 49 (Payments for RI/FS Future Response Costs) if Respondent determines that EPA has made a mathematical error or included a cost item that is not within the definition of RI/FS Future Response Costs, or if Respondent believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. To initiate such a dispute, Respondent shall submit a Notice of Dispute in writing to EPA's Remedial Project Manager within 30 days after receipt of the bill. Any such Notice of Dispute shall specifically identify the contested RI/FS Future Response Costs and the basis for objection. If Respondent submits a Notice of Dispute, Respondent shall within the 30-day period, also as a requirement for initiating the dispute, (a) pay all uncontested RI/FS Future Response Costs to EPA in the manner described in Paragraphs 50.a and 50.b, and (b) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation (FDIC) and remit to that escrow account funds equivalent to the amount of the contested RI/FS Future Response Costs. Respondent shall send to EPA's Remedial Project Manager a copy of the transmittal letter and check paying the uncontested RI/FS 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. If EPA prevails in the dispute, within 5 days after the resolution of the dispute, Respondent shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraphs 50.a and 50.b. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraphs 50.a and 50.b. Respondent 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 XVII (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its RI/FS Future Response Costs.

## **XVII. DISPUTE RESOLUTION**

53. Unless otherwise expressly provided for in this RI/FS ASAOC, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this RI/FS ASAOC. All persons, including EPA, Respondent, and Mueller shall attempt to resolve any disagreements concerning this RI/FS ASAOC expeditiously and informally.

### **54. Dispute Resolution with Respondent.**

a. Informal Dispute Resolution. If Respondent objects to any EPA action taken pursuant to this RI/FS ASAOC, including billings for RI/FS Future Response Costs, they

shall send EPA a written Notice of Dispute describing the objection(s) within 30 days after such action. EPA and Respondent shall have 30 days from EPA's receipt of Respondent's Notice of Dispute to resolve the dispute through informal negotiations (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this RI/FS ASAOC.

b. Formal Dispute Resolution. If the Parties are unable to reach an agreement within the Negotiation Period, Respondent shall, within 20 days after the end of the Negotiation Period, submit a statement of position to EPA's Remedial Project Manager. EPA may, within 20 days thereafter, submit a statement of position. Thereafter, the Region 5 Superfund Division Director will issue a written decision on the dispute to Respondent. EPA's decision shall be incorporated into and become an enforceable part of this RI/FS ASAOC. Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

#### **55. Dispute Resolution with Respondent and Mueller.**

a. Notice of Dispute by Respondent and Mueller. If Respondent and Mueller object to any EPA action taken pursuant to Paragraph 100 (Adequacy of Financial Assurance and Satisfaction of Section XXVII Requirements) of this RI/FS ASAOC, or if Mueller objects to any EPA action taken pursuant to Paragraph 1 of Appendix D (Form of Financial Assurance), they shall send EPA a written Notice of Dispute describing the objection(s) within 7 days after such action. The Parties and Mueller shall have 30 days from EPA's receipt of a Notice of Dispute under this Paragraph 55 to resolve the dispute through informal negotiations (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Any agreement reached by the Parties and Mueller pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this RI/FS ASAOC.

b. Formal Dispute Resolution. If the Parties and Mueller are unable to reach an agreement within the Negotiation Period, Respondent and Mueller, or Mueller only as applicable, shall, within 20 days after the end of the Negotiation Period, submit a statement of position to EPA's Remedial Project Manager. EPA may, within 20 days thereafter, submit a statement of position. Thereafter, the Region 5 Superfund Division Director will issue a written decision on the dispute to Mueller and Respondent. EPA's decision shall be incorporated into and become an enforceable part of this RI/FS ASAOC. Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

56. Except as provided in Paragraph 52 (Contesting RI/FS Future Response Costs) or as agreed by EPA, the invocation of formal dispute resolution procedures under this Section does not extend, postpone, or affect in any way any obligation of Respondent or Mueller under this RI/FS ASAOC. Except as provided in Paragraph 65, stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this RI/FS ASAOC. In the event that

Respondent does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIX (Stipulated Penalties).

### **XVIII. FORCE MAJEURE**

57. “Force Majeure” for purposes of this RI/FS ASAOC, is defined as any event arising from causes beyond the control of Respondent, of any entity controlled by Respondent, or of Respondent’s contractors that delays or prevents the performance of any obligation under this RI/FS ASAOC despite Respondent’s best efforts to fulfill the obligation. The requirement that Respondent exercises “best efforts to fulfill the obligation” includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. “Force majeure” does not include financial inability to complete the RI/FS Work or increased cost of performance.

58. If any event occurs or has occurred that may delay the performance of any obligation under this RI/FS ASAOC, Respondent shall notify EPA’s Remedial Project Manager orally or, in his or her absence, the alternate EPA Remedial Project Manager, or, in the event both of EPA’s designated representatives are unavailable, the Region 5 Superfund Division Director, within 3 days of when Respondent first knew that the event might cause a delay. Within 7 days thereafter, Respondent 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; Respondent’s rationale for attributing such delay to a force majeure; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health or welfare, or the environment. Respondent shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Respondent shall be deemed to know of any circumstance of which Respondent, any entity controlled by Respondent, or Respondent’s contractors knew or should have known. Failure to comply with the above requirements regarding an event shall preclude Respondent from asserting any claim of force majeure regarding that event, provided, however, that if EPA, despite the late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under Paragraph 57 and whether Respondent has exercised its best efforts under Paragraph 57, EPA may, in its unreviewable discretion, excuse in writing Respondent’s failure to submit timely or complete notices under this Paragraph.

59. If EPA agrees that the delay or anticipated delay is attributable to a force majeure, the time for performance of the obligations under this RI/FS ASAOC that are affected by the force majeure 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 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, EPA will notify Respondent in writing of its decision. If EPA agrees that the delay is attributable to a force majeure, EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure.

60. If Respondent elects to invoke the dispute resolution procedures set forth in Section XVII (Dispute Resolution), Respondent shall do so no later than 15 days after receipt of EPA’s notice. In any such proceeding, Respondent 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, 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 Respondent complied with the requirements of Paragraphs 57 and 58. If Respondent carries this burden, the delay at issue shall be deemed not to be a violation by Respondent of the affected obligation of this RI/FS ASAOC identified to EPA.

61. The failure by EPA to timely complete any obligation under the RI/FS ASAOC is not a violation of the RI/FS ASAOC, provided, however, that if such failure prevents Respondent from meeting one or more deadlines under the RI/FS ASAOC, Respondent may seek relief under this Section.

### **XIX. STIPULATED PENALTIES**

62. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 63.a and 64 for failure to comply with the obligations specified in Paragraphs 63.b and 64, unless excused under Section XVIII (Force Majeure). “Comply” as used in the previous sentence includes compliance by Respondent with all applicable requirements of this RI/FS ASAOC, within the deadlines established under this RI/FS ASAOC.

#### **63. Stipulated Penalty Amounts: Payments, Financial Assurance, Major Deliverables, and Other Milestones**

a. The following stipulated penalties shall accrue per violation per day for any noncompliance with any obligation identified in Paragraph 63.b:

<b>Penalty Per Violation Per Day</b>	<b>Period of Noncompliance</b>
\$ 500	1st through 14th day
\$ 1,500	15th through 30th day
\$ 3,000	31st day and beyond

#### **b. Obligations**

(1) Payment of any amount due under Section XVI (Payment of RI/FS Future Response Costs).

(2) Establishment and maintenance of financial assurance in accordance with Section XXVII (Financial Assurance).

(3) Establishment of an escrow account to hold any disputed RI/FS Future Response Costs under Paragraph 52 (Contesting RI/FS Future Response Costs).

(4) Submission of deliverables required pursuant to the RI/FS Statement of Work.

(5) Compliance with and implementation of approved deliverables submitted pursuant to the RI/FS Statement of Work.

64. **Stipulated Penalty Amounts: Other Deliverables.** The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate deliverables required by this RI/FS ASAOC, other than those specified in Paragraph 63.a:

<b>Penalty Per Violation Per Day</b>	<b>Period of Noncompliance</b>
\$ 300	1st through 14th day
\$ 1,000	15th through 30th day
\$ 2,000	31st day and beyond

65. In the event that EPA assumes performance of a portion or all of the RI/FS Work pursuant to Paragraph 78 (RI/FS Work Takeover), Respondent shall be liable for a stipulated penalty in the amount of \$100,000. Stipulated penalties under this Paragraph are in addition to the remedies available to EPA under Paragraphs 78 (RI/FS Work Takeover) and 101 (Access to Financial Assurance).

66. 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. Penalties shall continue to accrue during any dispute resolution period, and shall be paid within 15 days after the agreement or the receipt of EPA's decision. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under Section IX (Submission and Approval of Deliverables), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (b) with respect to a decision by the Region 5 Superfund Division Director, under Paragraphs 54.b and 55.b (Formal Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the Region 5 Superfund Division Director issues a final decision regarding such dispute. Nothing in this RI/FS ASAOC shall prevent the simultaneous accrual of separate penalties for separate violations of this RI/FS ASAOC.

67. Following EPA's determination that Respondent has failed to comply with a requirement of this RI/FS ASAOC, EPA may give Respondent written notification of the failure and describe the noncompliance. EPA may send Respondent 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 Respondent of a violation.

68. All penalties accruing under this Section shall be due and payable to EPA within 30 days after Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the Dispute Resolution procedures under Section XVII (Dispute Resolution) within the 30-day period. All payments to EPA under this Section shall indicate that the payment is for stipulated penalties and shall be made in accordance with Paragraph 49 (Payments for RI/FS Future Response Costs).

69. If Respondent fails to pay stipulated penalties when due, Respondent shall pay Interest on the unpaid stipulated penalties as follows: (a) if Respondent has timely invoked

dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to Paragraph 65 until the date of payment; and (b) if Respondent fails to timely invoke dispute resolution, Interest shall accrue from the date of demand under Paragraph 68 until the date of payment. If Respondent fails to pay stipulated penalties and Interest when due, the United States may institute proceedings to collect the penalties and Interest.

70. The payment of penalties and Interest, if any, shall not alter in any way Respondent's obligation to complete performance of the RI/FS Work required under this RI/FS ASAOC.

71. Nothing in this RI/FS ASAOC shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this RI/FS ASAOC or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), provided, however, that EPA shall not seek civil penalties pursuant Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this RI/FS ASAOC, except in the case of willful violation of this RI/FS ASAOC or in the event that EPA assumes performance of a portion or all of the RI/FS Work pursuant to Paragraph 78 (RI/FS Work Takeover).

72. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this RI/FS ASAOC.

## **XX. COVENANTS BY EPA**

73. Except as provided in Section XXI (Reservations of Rights by EPA), EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the RI/FS Work and RI/FS Future Response Costs. These covenants shall take effect upon the Effective Date. These covenants are conditioned upon the complete and satisfactory performance by Respondent of Respondent's obligations under this RI/FS ASAOC.

74. Additional Covered Persons. The covenants not to sue in Paragraph 73 (Covenants by EPA) extend only to Respondent and do not extend to any other person; provided, however, that these covenants not to sue (and the reservations thereto) shall also apply and extend to: (i) Mining Remedial Recovery Company ("MRRC"); (ii) Arava Natural Resources Company, Inc. ("Arava"); (iii) Mueller Industries, Inc. ("Mueller"); (iv) the successors and assigns of Respondent, MRRC, Arava, and Mueller, but only to the extent that the alleged liability of the successor or assign is based on the alleged liability of Respondent, MRRC, Arava, or Mueller; and (v) the officers, directors, and employees of Respondent, MRRC, Arava, and Mueller, but only to the extent that the alleged liability of the director, officer, or employee is based on said person's status as an officer or employee of Respondent, MRRC, Arava, or Mueller, or as a result of conduct within the scope of such person's employment or authority. These covenants shall take effect upon the Effective Date. These covenants are conditioned upon

the complete and satisfactory performance by Respondent of Respondent's obligations under this RI/FS ASAOC.

75. EPA agrees that the provision of funding for the RI/FS Work and/or of a corporate guarantee for Financial Assurance (Section XXVII) by any Additional Covered Person shall not be used by or on behalf of EPA to support any argument in any proceeding that the Additional Covered Person(s) is/are directly or indirectly liable under CERCLA or any other applicable law; provided however, that nothing in this Paragraph shall be construed to limit EPA's ability to access Financial Assurance from Mueller, as the corporate guarantor, pursuant to the terms of Section XXVII (Financial Assurance) of this RI/FS ASAOC. EPA acknowledges that Respondent and each Additional Covered Person reserve all rights in regard to the issue of direct and indirect liability under CERCLA and any other applicable law.

## **XXI. RESERVATIONS OF RIGHTS BY EPA**

76. Except as specifically provided in this RI/FS ASAOC, nothing in this RI/FS ASAOC shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this RI/FS ASAOC shall prevent EPA from seeking legal or equitable relief to enforce the terms of this RI/FS ASAOC against Respondent, or from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent, MRRC, Arava, or Mueller in the future to perform additional activities pursuant to CERCLA or any other applicable law.

77. The covenant not to sue set forth in Section XX (Covenants by EPA) above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this RI/FS ASAOC is without prejudice to, all rights against Respondent, MRRC, Arava, and Mueller with respect to all other matters, including, but not limited to:

- a. liability for failure by Respondent to meet a requirement of this RI/FS ASAOC;
- b. liability for costs not included within the definition of RI/FS Future Response Costs;
- c. liability for performance of response action other than the RI/FS Work;
- d. criminal liability;
- e. liability for violations of federal or state law that occur during or after implementation of the RI/FS Work;
- f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- g. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and

h. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site not paid as RI/FS Future Response Costs under this RI/FS ASAOC.

#### **78. RI/FS Work Takeover**

a. In the event EPA determines that Respondent: (1) has ceased implementation of any portion of the RI/FS Work; (2) is seriously or repeatedly deficient or late in its performance of the RI/FS Work; or (3) is implementing the RI/FS Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice (“RI/FS Work Takeover Notice”) to Respondent. Any RI/FS Work Takeover Notice issued by EPA (which writing may be electronic) will specify the grounds upon which such notice was issued and will provide Respondent 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 78.a, Respondent has not remedied to EPA’s satisfaction the circumstances giving rise to EPA’s issuance of the relevant RI/FS Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portion(s) of the RI/FS Work as EPA deems necessary (“RI/FS Work Takeover”). EPA will notify Respondent in writing (which writing may be electronic) (“Notice of Implementation of RI/FS Work Takeover”) if EPA determines that implementation of a RI/FS Work Takeover is warranted under this Paragraph 78.b. Funding of RI/FS Work Takeover costs is addressed under Paragraph 101 (Access to Financial Assurance).

c. Respondent may invoke the procedures set forth in Section XVII (Dispute Resolution) to dispute EPA’s implementation of a RI/FS Work Takeover under Paragraph 78.b. However, notwithstanding Respondent’s invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a RI/FS Work Takeover under Paragraph 78.b until the earlier of (1) the date that Respondent remedies, to EPA’s satisfaction, the circumstances giving rise to EPA’s issuance of the relevant RI/FS Work Takeover Notice, or (2) the date that a written decision terminating such RI/FS Work Takeover is rendered in accordance with Paragraph 54.b (Formal Dispute Resolution).

d. Notwithstanding any other provision of this RI/FS ASAOC, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

### **XXII. COVENANTS BY RESPONDENT, MRRC, ARAVA, AND MUELLER**

79. Respondent, MRRC, Arava, and Mueller covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the RI/FS Work, RI/FS Future Response Costs, or this RI/FS ASAOC, including, but not limited to:

a. any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund through Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;



b. any claims under Sections 107 and 113 of CERCLA, Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), or state law regarding the RI/FS Work, RI/FS Future Response Costs, and this RI/FS ASAOC; or

c. any claim arising out of response actions at or in connection with the Site for which RI/FS Future Response Costs were incurred, including any claim under the United States Constitution, the Indiana Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, or at common law.

80. Except as provided in Paragraph 83 (Waiver of Claims by Respondent) these covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Section XXI (Reservations of Rights by EPA), other than in Paragraph 77.a (liability for failure to meet a requirement of the RI/FS ASAOC), 77.d (criminal liability), or 77.e (liability for violations of federal or state law), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

81. Nothing in this Agreement shall be deemed to constitute approval or 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).

82. Respondent reserves, and this RI/FS ASAOC is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, 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, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her 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, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of Respondent's deliverables or activities.

**83. Waiver of Claims by Respondent, MRRC, Arava, and Mueller**

a. Respondent, MRRC, Arava, and Mueller agree not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that it may have:

(1) **De Micromis Waiver.** For all matters relating to the Site against any person where the person's liability to Respondent, MRRC, Arava, or Mueller 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 all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing

hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials; and

(2) ***De Minimis/Ability to Pay Waiver.*** For response costs relating to the Site against any person that in the future enters into a final CERCLA § 122(g) *de minimis* settlement, or a final settlement based on limited ability to pay, with EPA with respect to the Site.

**b. Exceptions to Waivers**

(1) The waivers under this Paragraph 83 shall not apply with respect to any defense, claim, or cause of action that Respondent, MRRC, Arava, or Mueller may have against any person otherwise covered by such waivers if such person asserts a claim or cause of action relating to the Site against Respondent.

(2) The waiver under Paragraph 83.a(1) (De Micromis Waiver) shall not apply to any claim or cause of action against any person otherwise covered by such waiver if EPA determines that: (i) the materials containing hazardous substances contributed to the Site by such person contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the Site; or (ii) such person has failed to comply with any information request or administrative subpoena issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. § 9604(e) or 9622(e), or Section 3007 of RCRA, 42 U.S.C. § 6927, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site; or if (iii) such person has been convicted of a criminal violation for the conduct to which the waiver would apply and that conviction has not been vitiated on appeal or otherwise.

### **XXIII. OTHER CLAIMS**

84. By issuance of this RI/FS ASAOC, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA shall not be deemed a party to any contract entered into by Respondent or Respondent's directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this RI/FS ASAOC.

85. Except as expressly provided in Paragraph 83 (Waiver of Claims by Respondent, MRRC, Arava, and Mueller) and Section XX (Covenants by EPA), nothing in this RI/FS ASAOC constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this RI/FS ASAOC, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages, and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

86. No action or decision by EPA pursuant to this RI/FS ASAOC shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

#### **XXIV. EFFECT OF SETTLEMENT/CONTRIBUTION**

87. Except as provided in Paragraph 74 (Additional Covered Persons) and Paragraph 83 (Waiver of Claims by Respondent, MRRC, Arava, and Mueller), nothing in this RI/FS ASAOC shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this RI/FS ASAOC. Except as provided in Paragraph 74 (Additional Covered Persons) and Paragraph 83 (Waiver of Claims by Respondent, MRRC, Arava, and Mueller), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), 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. Nothing in this RI/FS ASAOC diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

88. The Parties agree that this RI/FS ASAOC constitutes an administrative settlement pursuant to which Respondent has, as of the Effective Date, resolved liability to the United States within the meaning of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, or as may be otherwise provided by law, for the “matters addressed” in this RI/FS ASAOC. The “matters addressed” in this RI/FS ASAOC are the RI/FS Work and RI/FS Future Response Costs. The following persons are also entitled, as of the Effective Date of this RI/FS ASAOC, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 112(h)(4), or other applicable law, for “matters addressed” in this RI/FS ASAOC: (i) MRRC; (ii) Arava; (iii) Mueller; (iv) the successors and assigns of Respondent, MRRC, Arava, and Mueller, but only to the extent that the alleged liability of the successor or assign is based on the alleged liability of Respondent, MRRC, Arava, or Mueller; and (v) the officers, directors, and employees of Respondent, MRRC, Arava, and Mueller, but only to the extent that the alleged liability of the director, officer, or employee is based on said person’s status as an officer or employee of Respondent, MRRC, Arava, or Mueller, or as a result of conduct within the scope of such person’s employment or authority.

89. The Parties further agree that this RI/FS ASAOC constitutes an administrative settlement pursuant to which Respondent has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

90. Respondent shall, with respect to any suit or claim brought by it for matters related to this RI/FS ASAOC, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Respondent also shall, with respect to any suit or claim brought against it, MRRC, Arava, or Mueller for matters related to this RI/FS ASAOC, notify EPA in writing

within 10 days after service of the complaint or claim upon it. In addition, Respondent shall notify EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial, for matters related to this RI/FS ASAOC.

91. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondent, MRRC, Arava, and Mueller 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 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 covenant by EPA set forth in Section XX (Covenants By EPA).

## **XXV. INDEMNIFICATION**

92. The United States does not assume any liability by entering into this RI/FS ASAOC or by virtue of any designation of Respondent as EPA's authorized representatives under Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), and 40 C.F.R. § 300.400(d)(3). Respondent shall indemnify, save, and hold harmless the United States, its officials, agents, employees, contractors, subcontractors, and 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 Respondent, Respondent's officers, directors, employees, agents, contractors, or subcontractors, and any persons acting on Respondent's behalf or under their control, in carrying out activities pursuant to this RI/FS ASAOC. Further, Respondent agrees to pay the United States all costs it incurs, including but not limited to attorneys' fees and other expenses of litigation and RI/FS ASAOC arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, Respondent's officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this RI/FS ASAOC. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this RI/FS ASAOC. Neither Respondent nor any such contractor shall be considered an agent of the United States.

93. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

94. Respondent covenants not to sue and agree not to assert any claims or causes of action 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 Respondent and any person for performance of RI/FS Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Respondent 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 Respondent and any person for performance of RI/FS Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

## **XXVI. INSURANCE**

95. No later than 15 days before commencing any on-site RI/FS Work, Respondent shall secure, and shall maintain until the first anniversary after issuance of Notice of Completion of RI/FS Work pursuant to Section XXIX (Notice of Completion of RI/FS Work), commercial general liability insurance with limits of liability of \$500,000 per occurrence, automobile liability insurance with limits of liability of \$1 million per accident, and umbrella liability insurance with limits of liability of \$2 million in excess of the required commercial general liability and automobile liability limits, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondent pursuant to this RI/FS ASAOC. In addition, for the duration of the RI/FS ASAOC, Respondent shall provide EPA with certificates of such insurance. Respondent shall resubmit such certificates each year on the anniversary of the Effective Date. In addition, for the duration of the RI/FS ASAOC, Respondent shall satisfy, or shall ensure that Respondent's contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing RI/FS Work on behalf of Respondent in furtherance of this RI/FS ASAOC. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in a lesser amount, then, with respect to the contractor or subcontractor, Respondent need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Respondent shall ensure that all submittals to EPA under this Paragraph identify the USS Lead Site in East Chicago, Indiana and the EPA docket number for this action.

## **XXVII. FINANCIAL ASSURANCE**

96. In order to ensure completion of the RI/FS Work, Respondent shall secure financial assurance, initially in the amount of \$1,000,000 for the benefit of EPA. The financial assurance must be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA or under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>, and satisfactory to EPA. Respondent may use multiple mechanisms if they are limited to surety bonds guaranteeing payment, letters of credit, trust funds, and/or insurance policies.

a. A surety bond guaranteeing payment and/or performance of the RI/FS 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. An irrevocable letter of credit, payable to or at the direction of EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. A trust fund established for the benefit of EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;

d. A policy of insurance that provides EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency.

e. A guarantee to fund or perform the RI/FS Work executed in favor of EPA by Mueller Industries, Inc., provided that Mueller Industries, Inc. can demonstrate to EPA's satisfaction that it meets the financial test criteria of Paragraph 98.

97. Respondent has selected as an initial financial assurance a corporate guarantee by Mueller Industries, Inc., in the form attached as Appendix D. If the demonstrations in Paragraph 98 are made, EPA will find this form of financial assurance satisfactory. Within 30 days after the Effective Date, Respondent shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the form of financial assurance attached as Appendix D and shall submit such mechanisms and documents to Chief of the Program Accounting and Analysis Section, Region 5, US EPA, 77 W. Jackson Blvd. (MF-10J), Chicago, IL 60604.

98. Respondent also must, within 30 days of the Effective Date:

a. Demonstrate that:

(1) Mueller has:

- i. Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and
- ii. Net working capital and tangible net worth each at least six times the sum of \$1 million and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of \$1 million and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

(2) Mueller has:

- i. A current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and

- ii. Tangible net worth at least six times the sum of \$1 million and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of \$1 million and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

b. Submit to EPA for Mueller: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant in the form attached as Exhibits A and B of Appendix D.

99. Respondent must also:

a. Annually resubmit the documents described in Paragraph 98.b within 90 days after the close of Mueller's fiscal year;

b. Notify EPA within 30 days after Mueller determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and

c. Provide to EPA, within 30 days of EPA's request, reports of the financial condition of Mueller in addition to those specified in Paragraph 98.b; EPA may make such a request at any time based on a belief that Mueller may no longer meet the financial test requirements of this Section.

100. Adequacy of Financial Assurance and Satisfaction of Section XXVII Requirements.

a. Respondent shall diligently monitor the adequacy of the financial assurance. If Respondent becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, Respondent shall notify EPA of such information within 7 days. Respondent shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. EPA may extend this deadline for such time as is reasonably necessary for Respondent, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. Respondent shall follow the procedures of Paragraph 102 (Modification of Amount, Form, or Terms of Financial Assurance) in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism.

Respondent's inability to secure financial assurance in accordance with this Section does not excuse performance of any other obligation under this RI/FS ASAOC.

b. EPA Determination.

(1) If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify Respondent and Mueller of such determination.

(2) Unless, within 30 days of receiving notice from EPA under this Subparagraph, Respondent and Mueller invoke dispute resolution under Section XVII (Dispute Resolution), Respondent shall secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies EPA's notice. EPA may extend this deadline for such time as is reasonably necessary for Respondent, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days.

(3) If Respondent and Mueller do not agree with EPA's determination, then they may invoke dispute resolution under Section XVII. EPA, Respondent, and Mueller shall comply with the agreement or written decision that resolves the dispute.

c. Respondent's inability to secure financial assurance in accordance with this Section does not excuse performance of any other obligation under this RI/FS ASAOC.

**101. Access to Financial Assurance**

a. If EPA issues a Notice of Implementation of RI/FS Work Takeover under Paragraph 78.b, then, in accordance with any applicable financial assurance mechanism, EPA is entitled to: (1) the performance of the RI/FS Work; and/or (2) require that any funds guaranteed be paid in accordance with Paragraph 101.d.

b. If EPA is notified by the issuer of a financial assurance mechanism that it intends to cancel the mechanism, and Respondent fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with Paragraph 101.d.

c. If, upon issuance of a Notice of Implementation of RI/FS Work Takeover under Paragraph 78.b, EPA is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism to continue and complete the RI/FS Work, then EPA is entitled to demand an amount, as determined by EPA, sufficient to cover the cost of the remaining RI/FS Work to be performed. Respondent shall, within 14 days of such demand, pay the amount demanded as directed by EPA.

d. Any amounts required to be paid under this Paragraph 101 shall be, as directed by EPA: (i) paid to EPA in order to facilitate the completion of the RI/FS Work by EPA



or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the FDIC, in order to facilitate the completion of the RI/FS Work by another person. If payment is made to EPA, EPA may deposit the payment into the EPA Hazardous Substance Superfund or into the USS Lead Sitewide 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 Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

e. All EPA RI/FS Work Takeover costs not paid under this Paragraph 101 must be reimbursed as RI/FS Future Response Costs under Section XVI (Payment of RI/FS Future Response Costs).

#### **102. Modification of Amount, Form, or Terms of Financial Assurance.**

a. Timing of Requirements for a Request for Modification. Respondent may submit, on any anniversary of the Effective Date or at any other time agreed to by the Parties, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to the Chief of the Program Accounting and Analysis Section of EPA at the address in Paragraph 97, and must include an estimate of the cost of the remaining RI/FS Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. EPA will notify Respondent of its decision to approve or disapprove a requested reduction or change pursuant to this Paragraph.

b. Change in Amount. Respondent may reduce the amount of the financial assurance mechanism only in accordance with: (a) EPA's approval; or (b) if there is a dispute, the agreement or written decision resolving such dispute under Section XVII (Dispute Resolution).

c. Change in Form or Terms (Other Than the Amount). Respondent may change the form or terms (other than the amount) of the financial assurance mechanism only in accordance with EPA's approval. Any decision made by EPA on a request submitted under this Paragraph to change the form or terms (other than the amount) of a financial assurance mechanism shall not be subject to challenge by Respondent pursuant to the dispute resolution provisions of this RI/FS ASAO or in any other forum.

d. Timing for Completion of Modification and Submitting Modification. Within 30 days after receipt of EPA's approval of, or the agreement or decision resolving a dispute relating to, the requested modifications pursuant to this Paragraph, Respondent shall submit to EPA documentation of the reduced, revised, or alternative financial assurance mechanism in accordance with Paragraph 97.

**103. Release, Cancellation, or Discontinuation of Financial Assurance.** Respondent may release, cancel, or discontinue any financial assurance provided under this Section only: (a) if EPA issues a Notice of Completion of RI/FS Work under Section XXIX (Notice of Completion of RI/FS Work); (b) in accordance with EPA's approval of such release, cancellation, or discontinuation; or (c) if there is a dispute regarding the release, cancellation or

discontinuance of any financial assurance, in accordance with the agreement or final decision resolving such dispute under Section XVII (Dispute Resolution).

### **XXVIII. MODIFICATION**

104. EPA's Remedial Project Manager may modify any plan or schedule or the RI/FS SOW in writing or by oral direction. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of EPA's Remedial Project Manager's oral direction. Any other requirements of this RI/FS ASAOC may be modified in writing by mutual agreement of the parties.

105. If Respondent seeks permission to deviate from any approved work plan or schedule or the RI/FS SOW, Respondent's Remedial Project Manager shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondent may not proceed with the requested deviation until receiving oral or written approval from EPA's Remedial Project Manager pursuant to Paragraph 104.

106. No informal advice, guidance, suggestion, or comment by EPA's Remedial Project Manager or other EPA representatives regarding any deliverable submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this RI/FS ASAOC, or to comply with all requirements of this RI/FS ASAOC, unless it is formally modified.

### **XXIX. NOTICE OF COMPLETION OF RI/FS WORK**

107. When EPA determines that all RI/FS Work has been fully performed in accordance with this RI/FS ASAOC, with the exception of any continuing obligations required by this RI/FS ASAOC, including obligations under Section XII (Access to Information), Section XIII (Record Retention), and Section XVI (Payment of RI/FS Future Response Costs), EPA will provide written notice to Respondent. If EPA determines that any RI/FS Work has not been completed in accordance with this RI/FS ASAOC, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the RI/FS Work Plan, if appropriate, in order to correct such deficiencies. Respondent shall implement the modified and approved RI/FS Work Plan and shall submit a modified draft RI Report and/or FS Report in accordance with the EPA notice. Failure by Respondent to implement the approved modified RI/FS Work Plan shall be a violation of this RI/FS ASAOC.

### **XXX. INTEGRATION/APPENDICES**

108. This RI/FS ASAOC and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the RI/FS ASAOC embodied in this RI/FS ASAOC. The parties acknowledge that there are no representations, agreements, or understandings relating to the RI/FS ASAOC other than those expressly contained in this RI/FS ASAOC. The following appendices are attached to and incorporated into this RI/FS ASAOC:

- a. Appendix A: RI/FS Statement of Work

- b. Appendix B: Map of the USS Lead Site (showing OU1 and OU2)
- c. Appendix C: Map of Three Zones in OU1
- d. Appendix D: Form of Financial Assurance

**XXXI. ADMINISTRATIVE RECORD**

109. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondent shall submit to EPA documents developed during the course of the RI/FS upon which selection of the remedial action may be based. Upon request of EPA, Respondent shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports, and other reports. Upon request of EPA, Respondent shall additionally submit any previous studies conducted under state, local, or other federal authorities that may relate to selection of the remedial action, and all communications between Respondent and state, local, or other federal authorities concerning selection of the remedial action.


**XXXII. EFFECTIVE DATE**

110. This RI/FS ASAOC shall be effective 14 days after the RI/FS ASAOC is signed by the Regional Administrator or his/her delegate.

IT IS SO AGREED AND ORDERED:

**U.S. ENVIRONMENTAL PROTECTION AGENCY:**

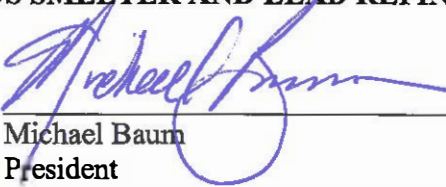
9/20/2017  
Dated

  
Margaret M. Guerriero  
Acting Director, Superfund Division  
EPA, Region 5  
Chicago, IL

THE UNDERSIGNED PARTY enters into this RI/FS ASAOC regarding the U.S. Smelter and Lead Refinery, Inc. Superfund Site:

**FOR US SMELTER AND LEAD REFINERY, INC.**

9-18-17  
Dated



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Michael Baum  
President  
U.S. Smelter and Lead Refinery, Inc.  
4780 Caterpillar Road, Unit C  
Redding, CA 96003

THE UNDERSIGNED PARTY hereby assents to the covenants set forth in Section XXII (Covenants by Respondent, MRRC, Arava, and Mueller) of this RI/FS ASAOC regarding the U.S. Smelter and Lead Refinery, Inc. Superfund Site:

**FOR MINING REMEDIAL RECOVERY COMPANY**

9-18-17

Dated



Michael Baum

President

Mining Remedial Removal Company


4780 Caterpillar Road, Unit C

Redding, CA 96003

THE UNDERSIGNED PARTY hereby assents to the covenants set forth in Section XXII (Covenants by Respondent, MRRC, Arava, and Mueller) of this RI/FS ASAOC regarding the U.S. Smelter and Lead Refinery, Inc. Superfund Site:

**FOR ARAVA NATURAL RESOURCES COMPANY,  
INC.**

9/18/17  
Date

  
Chris J. Mirabella  
Vice President – Legal & Secretary  
Arava Natural Resources Company, Inc.  
4780 Caterpillar Road, Unit C  
Redding, CA 96003

THE UNDERSIGNED PARTY hereby assents to the covenants set forth in Section XXII (Covenants by Respondent, MRRC, Arava, and Mueller), the terms of Financial Assurance set forth in Section XXVII (Financial Assurance), and to the provisions of Section XVII (Dispute Resolution) of this RI/FS ASAOC regarding the U.S. Smelter and Lead Refinery, Inc. Superfund Site:

**FOR MUELLER INDUSTRIES, INC.**

9/18/17  
Dated

  
Chris J. Miriello  
Vice President, General Counsel & Corporate  
Secretary  
Mueller Industries, Inc.  
8285 Tournament Drive, Suite 150  
Memphis, TN 38125

**APPENDIX A**  
**RI/FS STATEMENT OF WORK**



APPENDIX A:  
STATEMENT OF WORK  
FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
OF OPERABLE UNIT 2 OF THE U.S. SMELTER AND LEAD  
REFINERY, INC. SUPERFUND SITE

I. PURPOSE

This Statement of Work forms a part of the Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study of Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site (“RI/FS ASAOC”) in East Chicago, Indiana. The abbreviated name of this document shall be the “RI/FS SOW.” It sets forth the requirements for conducting a Remedial Investigation and Feasibility Study (RI/FS) at Operable Unit 2 of the USS Lead Site (Site).

The USS Lead Site is located approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana. East Chicago is surrounded by heavily industrialized areas including steel mills, oil refineries, heavy manufacturing, chemical processing plants, and heavy rail.

EPA has divided the Site into two operable units: Operable Unit 1 (OU1) and Operable Unit 2 (OU2). OU1 consists generally of a residential neighborhood in East Chicago, Indiana, commonly known as the Calumet neighborhood. OU2 consists of a 79-acre parcel of land located at 5300 Kennedy Avenue, as well as the groundwater associated with both OU1 and OU2. The definitions of OU1 and OU2 are set forth in Section III (Definitions) of the RI/FS ASAOC. Where necessary to make a distinction, the 79-acre parcel of land that forms a part of OU2 will be referred to as the “Former USS Lead Facility” and the groundwater that forms a part of OU2 will be referred to as the “Groundwater.”

As to OU1, EPA completed an RI/FS in June of 2012 and issued a Record of Decision on November 30, 2012. OU1 is not the subject of this RI/FS SOW.

As to the part of OU2 that is the Former USS Lead Facility, the RI shall fully evaluate the nature and extent of hazardous substances, pollutants or contaminants and assess the risk which these hazardous substances, pollutants or contaminants present for human health and the environment. As to the part of OU2 that is the Groundwater, the RI also shall fully evaluate the nature and extent of hazardous substances, pollutants or contaminants in the Groundwater and assess the risk which these hazardous substances, pollutants or contaminants present for human health and the environment. As to the scope of the Groundwater investigation, it shall include the groundwater that is: (i) under OU1 and the Former USS Lead Facility; and (ii) nearby the Former USS Lead Facility where EPA has

reason to believe that the off-Site groundwater was potentially impacted by the operations of the Former USS Lead Facility; provided however, that Respondent shall not be required to investigate groundwater under the Former DuPont Facility.

The RI shall provide sufficient data to develop and evaluate effective remedial alternatives. The FS shall evaluate alternatives for addressing the impact to human health and the environment from hazardous substances, pollutants or contaminants.

Respondent shall prepare and complete the RI and FS Reports in compliance with the RI/FS ASAO, this RI/FS SOW, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 C.F.R. Part 300), as amended, and all requirements and guidance for RI/FS studies and reports including, but not limited to, United States Environmental Protection Agency (EPA) Superfund Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA/540/G-89/004, October 1988) (RI/FS Guidance), and any other guidance that EPA uses in conducting or submitting deliverables for an RI/FS. Exhibit B sets forth a partial list of guidance EPA uses for an RI/FS.

Respondent shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RI/FS at OU2 of the Site, except as otherwise specified herein.

## II. DOCUMENT REVIEW

Respondent shall comply with Section IX of the RI/FS ASAO (Submission and Approval of Deliverables) for any documents or deliverables due under this RI/FS SOW.

## III. SCOPE

Respondent shall complete the following tasks as part of this RI/FS:

- Task 1: Project Scoping and RI/FS Planning Documents;
- Task 2: Community Relations;
- Task 3: OU2 Site Characterization;
- Task 4: OU2 Remedial Investigation Report;
- Task 5: Treatability Studies;
- Task 6: Development and Screening of Alternatives (Technical Memorandum);
- Task 7: Detailed Analysis of Alternatives (FS Report); and
- Task 8: Progress Reports

### TASK 1: PROJECT SCOPING AND RI/FS PLANNING DOCUMENTS

## 1.1 OU2 Background

Respondent shall gather and analyze all existing background information on OU2 and sufficient background information on OU1 to enable Respondent to prepare the RI/FS for OU2. Respondent shall conduct a Site visit to assist in planning the scope of the RI/FS.

### 1.1.1 Collect and Analyze Existing Data

Before planning the RI/FS activities, Respondent shall thoroughly compile and review all existing OU2 data and sufficient OU1 data (for example, the OU1 RI/FS) to enable Respondent to undertake an effective plan for the OU2 RI/FS. Historical data shall be submitted electronically according to EPA Region 5 specifications. Existing OU2 data includes presently available data relating to the varieties and quantities of hazardous substances, pollutants and contaminants at OU2, past disposal practices, the results of previous sampling activities, and EPA's air photo analysis of OU2. Existing information about OU2 is included in documentation associated with the RCRA corrective action activities. Existing OU2 data also includes presently available data relating to groundwater under both OU1 and OU2, including data associated with RCRA corrective action at 5214 Kennedy Avenue, East Chicago, Indiana. As for OU1, existing data that should be compiled and reviewed includes data from the OU1 RI and FS Reports and sufficient data from Remedial Design sampling to develop an effective plan for the OU2 RI/FS.

### 1.1.2 Conduct Site Visit

Respondent shall visit the Site (both OU1 and OU2) during the project scoping phase to develop a better understanding of the Site, and focus on the sources and the areas of contamination, as well as potential exposure pathways and receptors at the Site. During the Site visit, Respondent shall observe, to the extent possible, OU2's physiography, hydrology, geology, and demographics, as well as natural resources, ecological and cultural features. Respondent shall coordinate this visit with the EPA Remedial Project Manager (RPM).

## 1.2. RI/FS Planning Documents (Work Plan/Field Sampling Plan/QAPP/HASP)

### 1.2.1 General Requirements

Within 60 calendar days after the RI/FS ASAOC's effective date, Respondent shall submit draft RI/FS Planning Documents (including the Work Plan (WP)/Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP)) to EPA, with a copies to the IDEM, for review and approval by EPA.

The objective of the RI/FS Planning Documents is to develop an RI/FS strategy and general

management plan that accomplishes the following:

- An RI that fully determines the nature and extent of the release or threatened release of hazardous substances, pollutants, or contaminants at and from OU2 of the Site. In performing this investigation, Respondent shall gather sufficient data, samples, and other information to fully characterize the nature and extent of the contamination at OU2 of the Site, to support the human health and ecological risk assessments, and to provide sufficient data for the identification and evaluation of remedial alternatives for OU2 of this Site.
- An FS that identifies and evaluates alternatives for remedial action to protect human health and the environment by preventing, eliminating, controlling or mitigating the release or threatened release of hazardous substances, pollutants, or contaminants at and from OU2 of the Site.

When scoping the specific aspects of the project, Respondent shall meet with EPA, with an invitation to IDEM to participate, to discuss all project planning decisions and special concerns associated with the Site.

The RI/FS Planning Documents shall include a detailed description of the tasks Respondent shall perform, the information needed for each task, a detailed description of the information Respondent shall produce during and at the conclusion of each task, and a description of the work products that Respondent shall submit to EPA and the IDEM. This includes the deliverables set forth in this RI/FS SOW; a schedule for each of the required activities consistent with the RI/FS Guidance and other relevant guidance; and a project management plan including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, requirements for submittal of electronic data, data format and backup data management), monthly reports to EPA and the IDEM, and meetings and presentations to EPA and the IDEM at the conclusion of each major phase of the RI/FS. Respondent shall refer to Appendix B of the RI/FS Guidance for a description of the required contents of the RI/FS Planning Documents.

The RI/FS Planning Documents shall include the preliminary objectives for the remedial action at OU2 of the Site; preliminary potential state and federal ARARs (chemical-specific, location-specific and action-specific); a description of the OU2 management strategy Respondent and EPA develop during scoping; a preliminary identification of remedial alternatives; and data needs for fully characterizing the nature and extent of the contamination at OU2, evaluating risks and developing and evaluating remedial alternatives. The RI/FS Planning Documents shall reflect coordination with treatability study requirements, if any. The RI/FS Planning Documents

shall also include a process for and manner of refining and/or identifying additional Federal and State ARARs, and for preparing the human health and ecological risk assessments and the FS.

### 1.2.2 Specific Requirements

Respondent shall prepare the RI/FS Planning Documents as described in *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (October, 1988) and shall include:

#### 1.2.2.1 Site Background

The Site Background section shall include a brief summary of the Site location, description, physiography, hydrology, geology, demographics, ecological, cultural and natural resource features, Site history, description of previous investigations and responses that local, state, federal, or private parties have conducted at the Site, and Site data evaluations and project planning completed during the scoping process.

The Site Background section shall discuss areas of waste handling and disposal activities at OU2, the locations of existing groundwater monitoring wells at the Site, if any, and previous surface water, sediment, soil, groundwater, and air sampling locations at the Site. For OU2, the Site Background section shall include a summary description of available data and identify areas where hazardous substances, pollutants or contaminants were detected and the detected levels. This includes the data from the previous RCRA corrective action activities, and any other additional information Respondent submitted to EPA or IDEM. For OU1, the Site Background section shall include a summary description of the data from the previous RI/FS and such information from the Remedial Design as is necessary and sufficient to support the OU2 RI/FS. The Site Background section shall include tables displaying the minimum and maximum levels of detected hazardous substances, pollutants or contaminants in Site areas and media.

#### 1.2.2.2 Work Plan/Field Sampling Plan

Respondent shall prepare the WP/FSP portion of the RI/FS Planning Documents to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data meet the Site-specific Data Quality Objectives (DQOs) as established in the QAPP and FSP. All sampling and analyses performed shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain of custody procedures. Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with

EPA guidance.

Upon EPA's request, Respondent shall have such a laboratory analyze samples EPA submits for quality assurance monitoring. Respondent shall provide EPA with the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis. Respondent shall also ensure the provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, "Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites."

Upon EPA's request, Respondent shall allow EPA or its authorized representatives to take split and/or duplicate samples of any samples Respondent or their contractors or agents collect. Respondent shall notify EPA not less than 15 business days in advance of any sample collection activity. EPA shall have the right to take any additional samples that it determines to be necessary.

#### 1.2.2.3 Data Gap Description/Data Acquisition

As part of the FSP, Respondent shall analyze the currently available data. Respondent shall identify those areas of OU2 and nearby areas that require additional data and evaluation in order to define the extent of hazardous substances, pollutants or contaminants. This Section of the FSP shall include a description of the number, types, and locations of samples to be collected. The FSP shall include an environmental program to accomplish the following:

- Conduct OU2 Reconnaissance including:
  - OU2 surveys including property, boundary, utility rights-of-way, and topographic information;
  - Land Survey;
  - Topographic Mapping; and
  - Field Screening.
  
- Conduct Geological Investigations (soils and sediments) to determine the extent of hazardous substances, pollutants or contaminants in surface soils, subsurface soils and sediments currently existing at OU2 including:
  - Collect Surface Soil Samples;
  - Perform Soil Borings and/or Test Pits;
  - Collect Subsurface Soil Samples;
  - Collect Sediment Samples;
  - Survey Soil gases; and

- Identify real-world horizontal, vertical, and elevation coordinates for all samples and OU2 features in accordance with EPA Region 5 electronic data requirements.
- Conduct Air Investigations to determine the extent of atmospheric hazardous substances, pollutants or contaminants at and from OU2, which shall include:
  - Collect Air Samples; and
  - Establish Air Monitoring Station.
- Conduct Hydrogeological Investigations (groundwater) to determine the horizontal and vertical distribution of hazardous substances, pollutants or contaminants in the groundwater and the extent, fate and transport of any groundwater plumes containing hazardous substances, pollutants or contaminants at the Site including:
  - Installing monitoring well networks;
  - Collecting groundwater samples;
  - Measure groundwater depth and elevations; and
  - Evaluate flow and hydrodynamics;
  - Modeling; and
  - Identify the local uses of groundwater including the number, location, depth and use of nearby private and municipal wells.
- Conduct Geophysical Investigations to delineate waste depths, thicknesses and volume; the elevations of the underlying natural soil layer and the extent of cover over fill areas including the following, as appropriate:
  - Magnetometer;
  - Electromagnetic;
  - Ground-Penetrating Radar;
  - Seismic Refraction;
  - Resistivity;
  - Site Meteorology;
  - Cone Penetrometer Survey;
  - Remote Sensor Survey;
  - Radiological Investigation; and
  - Test Pits, trenches and soil borings
- Conduct Ecological Investigations to assess the impact to aquatic and terrestrial ecosystems from the disposal, release and migration of hazardous substances, pollutants or contaminants at OU2 including:

- Wetland and Habitat Delineation;
  - Wildlife Observations;
  - Community Characterization;
  - Endangered Species Identification; and
  - Biota Sampling and Population Studies
- Conduct an Investigative Derived Waste (IDW) Investigation to characterize and dispose of investigation-derived wastes in accordance with local, state, and federal regulations as specified in the FSP.
  - Evaluate and document the need for Treatability Studies. If Respondent or EPA identifies remedial actions that involve treatment, Respondent shall include treatability studies as outlined in Task 5 of this RI/FS SOW unless Respondent satisfactorily demonstrates to EPA that such studies are not needed. When treatability studies are needed, Respondent shall plan initial treatability testing activities (such as research and study design) to occur concurrently with Site characterization activities.

However, Respondent shall not be required to collect additional samples or perform additional analysis if sufficient data or analysis already exist and can be incorporated into the OU2 RI/FS.

#### 1.2.2.4. Quality Assurance Project Plan (QAPP)

Respondent shall prepare a QAPP that is Site-specific and covers sample analysis and data handling for samples collected during the RI, based on the RI/FS ASAOC and guidance EPA provides. Respondent shall prepare the QAPP in accordance with “EPA Requirements of Quality Assurance Project Plans (QA/R-5)” (EPA/240/B-01/003, March 2001) and “EPA Guidance for Quality Assurance Project Plans (QA/G-5)” (EPA/600/R-02/009, December 2002) and the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) Manual (EPA/505/B-04/900A, March 2005) or equivalent documentation as determined by EPA. The QAPP may include field based analytical methods, if appropriate and scientifically defensible.

Respondent shall demonstrate, in advance and to EPA’s satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media sampled within detection and quantification limits consistent with both QA/QC procedures and Data Quality Objectives (DQO) EPA approves in the Site QAPP. The laboratory must have and follow an approved QA program. If a laboratory not in the Contract Laboratory Program is selected, methods consistent with CLP methods that would be used at this Site for the purposes EPA proposes and QA/QC procedures



EPA approves shall be used. Respondent shall only use laboratories which have a documented Quality Assurance Program which complies with ANSI/ASQC E-4 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.

Respondent shall participate in a pre-QAPP meeting or conference call with EPA. The purpose of this meeting or conference call is to discuss QAPP requirements and obtain any clarification needed to prepare the QAPP.

#### 1.2.2.4. Health and Safety Plan

Respondent shall prepare a Health and Safety Plan that conforms to its health and safety program and complies with the Occupational Safety and Health Administration (OSHA) regulations and protocols outlined in 29 C.F.R. Part 1910. The Health and Safety Plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). The Health and Safety Plan shall include the 11 elements described in the RI/FS Guidance such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and Site control. EPA does not "approve" the Respondent's Health and Safety Plan, but rather reviews it to ensure that all the necessary elements are included, and that the plan provides for the protection of human health and the environment, and after that review provides comments as may be necessary and appropriate. The safety plan must, at a minimum, follow EPA's guidance document Standard Operating Safety Guides (Publication 9285.1-03, PB92-963414, June 1992).

### TASK 2: COMMUNITY INVOLVEMENT SUPPORT AND TECHNICAL ASSISTANCE PLAN

EPA has the responsibility of developing and implementing community involvement activities for the Site. Previously, EPA developed a Community Involvement Plan (CIP) for the Site and EPA has responsibility for implementing it. If requested by EPA, Respondent shall participate in community involvement activities, including participation in (1) the preparation of information regarding the RI/FS Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities relating to the RI/FS Work. Respondent's support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to any Community Advisory Groups or other entity to

provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Respondent's responsibilities for community involvement activities. All community involvement activities conducted by Respondent at EPA's request are subject to EPA's oversight.

### TASK 3: OU2 SITE CHARACTERIZATION

#### 3.1 Investigate and Define Site Physical and Biological Characteristics

Respondent shall implement the Work Plan/Field Sampling Plan and collect data and/or incorporate and update, information in the previous RI on physical and biological characteristics of OU2 and its surrounding areas including the physical physiography, geology, and hydrology, and specific physical characteristics. This information will be ascertained through a combination of previous reports, physical measurements, observations, and sampling efforts and will be utilized to define potential transport pathways and human ecological receptor populations. In defining the Site's physical characteristics, Respondent will also obtain sufficient engineering data (such as pumping characteristics) for the projection of contaminant fate and transport, and development and screening of remedial action alternatives, including information to assess treatment technologies.

Respondent shall provide the RPM, or the entity the RPM designates, with a paper copy and an electronic copy (according to EPA Region 5 format specification) of technical information related to OU2 Characterization, including laboratory data, within the monthly progress reports and in no event later than 90 days after samples are shipped for analysis. In addition, the monthly progress reports will summarize field activities (including drilling locations, depths and field notes if the RPM requests), problems encountered, solutions to problems, and upcoming field activities.

Upon request by EPA, Respondent shall allow EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by the Respondent or their contractors or agents. Respondent shall notify EPA not less than 15 business days in advance of any sample collection activity. The EPA shall have the right to take any additional samples that it deems necessary.

#### 3.2 Define Sources of Contamination

Respondent shall locate each source of contamination of OU2, including both the Former USS Lead Facility and the Groundwater, and including potential sources of apparent increasing arsenic concentrations at monitoring well 7. For each location, Respondent shall determine the

areal extent and depth of contamination by sampling, including XRF sampling, consistent with the QAPP. Respondent shall determine the physical characteristics and chemical constituents and their concentrations for all known and discovered sources of contamination. Respondent shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QAPP and DQOs. Defining the source of contamination will include analyzing the potential for contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies. Respondent shall fill in data gaps where data does not currently exist or is inadequate to characterize the contamination, such as with data relating to the uplands area on the northern edge, the wetlands, and the dune area of the Former USS Lead Facility.

### 3.3 Describe the Nature and Extent/Fate and Transport of Contamination

Respondent shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, Respondent will utilize the information of on-site physical and biological characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. Respondent will then implement an iterative monitoring program and any study program identified in the work plan or sampling plan such that by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the Site can be determined. In addition, Respondent shall gather data for calculations of contaminant fate and transport. This process is continued until the area and depth of contamination are known to the level of contamination established in the QAPP and DQOs.

#### 3.3.1 Evaluate OU2 Characteristics

Respondent shall analyze and evaluate the data to describe: (1) OU2 physical and biological characteristics; (2) contaminant source characteristics; (3) nature and extent of contamination; and (4) contaminant fate and transport. Results of OU2 physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. Respondent shall evaluate the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to EPA in a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA together with a sensitivity analysis. The RI data shall be presented electronically according to EPA Region 5 format requirements. Analysis of data collected

for OU2 characterization will meet the DQOs developed in the QAPP and stated in the FSP (or revised during the RI).

### 3.3.2. Baseline Human Health Risk Assessment

As an attachment to the RI Report, Respondent shall prepare and submit a Baseline Human Health Risk Assessment report to EPA, with a copy to the IDEM, for EPA's review and approval. Respondent shall conduct the baseline risk assessment to determine whether site contaminants pose a current or potential risk to human health and the environment. The major components of the baseline risk assessments include contaminant identification, exposure assessment, toxicity assessment, and human health risk characterization. Appropriate information from the OU1 RI may be updated and incorporated into the OU2 Baseline Human Health Risk Assessment.

Respondent shall conduct a baseline human health risk assessment that focuses on actual and potential risks to persons coming into contact with on-site hazardous substances, pollutants or contaminants as well as risks to the nearby residential, recreational and industrial worker populations from exposure to hazardous substances in groundwater and sediment in sewers and associated soils, pollutants or contaminants in groundwater, soils, sediments, surface water, air, and ingestion of contaminated organisms in nearby, impacted ecosystems. The human health risk assessment shall define central tendency and reasonable maximum estimates of exposure for current land use conditions and reasonable future land use conditions. The human health risk assessment shall use data from the Site and nearby areas to identify the contaminants of concern (COC), provide an estimate of how and to what extent human receptors might be exposed to these COCs, and provide an assessment of the health effects associated with these COCs. The human health risk assessment shall project the potential risk of health problems occurring if no cleanup action is taken at OU2 of the Site and/or nearby areas, and establish target action levels for COCs (carcinogenic and non-carcinogenic).

Respondent shall conduct the human health risk assessment in accordance with EPA guidance including, at a minimum: "Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part A)," Interim Final (EPA-540-1-89-002)," OSWER Directive 9285.7-01A; December 1, 1989; and "Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)," Interim, (EPA 540-R-97-033), OSWER 9285.7-01D, January, 1998 or subsequently issued guidance.

Respondent shall also conduct the human health risk assessment in accordance with the following additional guidance found in the following EPA OSWER directives:

- 1) “Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities,” OSWER Directive 9200.4-27; August, 1998;
- 2) “Implementation of the Risk Assessment Guidance for Superfund (RAGS) Volume I - Human Health Evaluation Manual, (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments) (Interim),” OSWER Directive 9285.7-01D-1; December 17, 1997;
- 3) “Soil Screening Guidance: Technical Background Document,” OSWER Directive 9355.4-17A; May 1, 1996 and “Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, OSWER Directive 9355.4; March 24, 2001;
- 4) “Soil Screening Guidance: User’s Guide,” Publication 9355.4-23; April, 1996;
- 5) “Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities,” OSWER Directive 9355.4-12; July 14, 1994;
- 6) “Guidance Manual for the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children,” Publication 9285.7-15-1; February, 1994, and associated, clarifying Short Sheets on IEUBK Model inputs, including but not limited to OSWER 9285.7-32 through 34, as listed on the OSWER lead internet site at: [www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm);
- 7) “Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children,” Version 0.99D, NTIS PB94-501517, 1994 or “Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children,” Windows© version, 2001;
- 8) “Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual: (Part B, Development of Risk-based Preliminary Remediation Goals),” Interim, OSWER Directive 9285.7-01B; December, 1991;
- 9) “Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors,” OSWER Directive 9285.6-03; March 25, 1991; and
- 10) “Exposure Factors Handbook,” Volumes I, II, and III; August 1997 (EPA/600/P-95/002F a,b,c).

Respondent shall also comply with the guidance on assessing human health risk associated with adult exposures to lead in soil as found in the following document: “Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil,” December, 1996. This document may be downloaded from the Internet at the following address:

[www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm).

Respondent shall prepare the Human Health Risk Assessment report according to the guidelines outlined below:

- Hazard Identification (sources). Respondent shall review available information on the hazardous substances present at the site and identify the major contaminants of concern;
- Dose-Response Assessment. Respondent shall select contaminants of concern based on their intrinsic toxicological properties;
- Conceptual Exposure/Pathway Analysis. Respondent shall identify and analyze critical exposure pathways (e.g., drinking water). The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed;
- Characterization of Site and Potential Receptors. Respondent shall identify and characterize human populations in the exposure pathways;
- Exposure Assessment. The exposure assessment will identify the magnitude of actual or potential human exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, Respondent shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at OU2;
- Risk Characterization. During risk characterization, Respondent shall compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near OU2 are affecting or could potentially affect human health;
- Identification of Limitations/Uncertainties. Respondent shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report; and
- Site Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, Respondent shall develop a conceptual model of OU2.

### 3.3.3 Baseline Ecological Risk Assessment

As an attachment to the RI Report, the Respondent shall submit a Baseline Ecological Risk Assessment report for OU2 to EPA, with a copy to IDEM, for review and approval by EPA. In the ecological risk assessment report, the Respondent shall evaluate and assess the risk to

the environment posed by OU2 contaminants. Respondent shall prepare the ecological risk assessment report in accordance with EPA guidance including, at a minimum: “Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments, (EPA-540-R-97-006, June 1997), OSWER Directive 9285.7-25 and shall follow the guidelines outlined below:

- Hazard Identification (sources). Respondent shall review available information on the hazardous substances present in OU2 and identify the major contaminants of concern.
- Dose-Response Assessment. Respondent must select contaminants of concern based on their intrinsic toxicological properties.
- Conceptual Exposure/Pathway Analysis. Critical exposure pathways (e.g., surface water) shall be identified and analyzed. The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.
- Characterization of OU2 and Potential Receptors. Respondent shall identify and characterize environmental exposure pathways.
- Selection of Chemicals, Indicator Species, and End Points. In preparing the assessment, Respondent will select representative chemicals, indicator species (species that are especially sensitive to environmental contaminants), and end points on which to concentrate.
- Exposure Assessment. In the exposure assessment, Respondent must identify the magnitude of actual or environmental exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, Respondent shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at OU2.
- Toxicity Assessment/Ecological Effects Assessment. The toxicity and ecological effects assessment will address the types of adverse environmental effects associated with chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity (e.g., weight of evidence for a chemical's carcinogenicity).
- Risk Characterization. During risk characterization, Respondent shall compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near OU2 are affecting or could potentially affect the environment.

- Identification of Limitations/Uncertainties. Respondent shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.
- Site Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, Respondent shall develop a conceptual model of OU2

Appropriate information from the OU1 RI may be updated and incorporated into the OU2 Baseline Ecological Health Risk Assessment.

### 3.4 Current and Future Land Uses and Reuse Assessment of Former USS Lead Facility

As an Attachment to the RI Report, Respondent shall submit a Memorandum to EPA for review and approval that evaluates the current and reasonably anticipated future land uses of the Former USS Lead Facility. The Memorandum shall identify: (1) past uses of the Former USS Lead Facility including title and lien information; (2) current uses and neighboring areas; (3) Respondent's plans for the Former USS Lead Facility following cleanup and any prospective purchasers; (4) applicable zoning laws and ordinance; (5) current zoning; 6) applicable local area land use plans, master plans and how they affect the Former USS Lead Facility; (7) existing local restrictions on property; (8) property boundaries; (9) groundwater use determinations, wellhead protection areas, recharge areas and other areas identified in the state's Comprehensive Ground Water Protection Program; (10) flood plains, wetland, or endangered or threatened species; and (11) utility rights of way.

If EPA, in its sole discretion, determines that a Reuse Assessment is necessary, Respondent will perform the Reuse Assessment in accordance with EPA guidance, including, but not limited to: "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive," OSWER 9355.7-06P, June 4, 2001, upon request of EPA. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for OU2, if any.

### TASK 4: OU2 REMEDIAL INVESTIGATION (RI) REPORT

Within 60 calendar days following the receipt of the last set of analytical data collected as part of the RI or unless otherwise approved by EPA, Respondent shall submit to EPA for review and approval, with a copy to the IDEM, an RI Report addressing OU2 and nearby areas. The RI Report shall be consistent with the RI/FS ASAOC and this RI/FS SOW, and shall accurately establish OU2 characteristics such as media contaminated, extent of contamination, and the physical boundaries of the contamination. Pursuant to this objective, Respondent shall obtain only the essential amount of detailed data necessary to determine the key(s) contaminant(s)



movement and extent of contamination. Key contaminant(s) must be selected based on persistence and mobility in the environment and the degree of hazard. The key contaminant(s) identified in the RI shall be evaluated for receptor exposure and an estimate of the key contaminant(s) level reaching human or environmental receptors must be made. Respondent shall use existing standards and guidelines such as drinking-water standards, water-quality criteria, and other criteria EPA accepts as appropriate for the situation to evaluate effects on human receptors who may be exposed to the key contaminant(s) above appropriate standards or guidelines. Respondent shall complete the RI Report in accordance with the following requirements:

Respondent shall submit an RI Report to EPA for review and approval pursuant to Section 2, which includes the following:

- Executive Summary;
- Site Background;
- Investigation (as applicable)
  - Site Reconnaissance
  - Field Investigation & Technical Approach
  - Chemical Analysis & Analytical Methods
  - Field Methodologies
  - Biological
  - Surface Water
  - Sediment
  - Soil Boring
  - Soil Sampling
  - Monitoring Well Installation
  - Groundwater Sampling
  - Hydrogeological Assessment
  - Air Sampling
  - Waste Investigation
  - Geophysical Investigation
- Site Characteristics (as applicable)
  - Geology
  - Hydrogeology
  - Meteorology
  - Demographics and Land Use
  - Ecological Assessment
  - Hydrodynamics
- Nature and Extent of Contamination
  - Contaminant Sources

- Contaminant Distribution and Trends
- Fate and Transport
  - Contaminant Characteristics
  - Transport Processes
  - Contaminant Migration Trends
- Human Risk Assessment
  - Hazard Identification (sources)
  - Dose-Response Assessment
  - Prepare Conceptual Exposure/Pathway Analysis
  - Characterization of Site and Potential Receptors
  - Exposure Assessment
  - Risk Characterization
  - Identification of Limitations/Uncertainties
  - Site Conceptual Model
- Ecological Risk Assessment
  - Hazard Identification (sources)
  - Dose-Response Assessment
  - Prepare Conceptual Exposure/Pathway Analysis
  - Characterization of Site and Potential Receptors
  - Selection of Chemicals, Indicator Species, and End Points
  - Exposure Assessment
  - Toxicity Assessment/Ecological Effects Assessment
  - Risk Characterization
  - Identification of Limitations/Uncertainties
  - Site Conceptual Model
- Summary and Conclusions

## TASK 5: TREATABILITY STUDIES

If EPA or Respondent determines that treatability testing is necessary, Respondent shall conduct treatability studies as described in this Task 5 of this RI/FS SOW. In addition, if applicable, Respondent shall use the testing results and operating conditions in the detailed design of the selected remedial technology. Respondent shall perform the following activities.

### 5.1 Determine Candidate Technologies and the Need for Testing

Respondent shall submit a Candidate Technologies and Testing Needs Technical Memorandum to EPA for review and approval, with a copy to the IDEM, identifying candidate technologies for a treatability studies program. The list of candidate technologies shall cover the range of

technologies required for alternatives analysis. Respondent shall determine and refine the specific data requirements for the testing program during OU2 characterization and the development and screening of remedial alternatives.

#### 5.1.1 Conduct Literature Survey and Determine the Need for Treatability Testing

Within the Candidate Technologies and Testing Needs Technical Memorandum, Respondent shall conduct a literature survey to gather information on the performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. Respondent shall conduct treatability studies except where Respondent can demonstrate to EPA's satisfaction that they are not needed.

### 5.2 Treatability Testing and Deliverables

#### 5.2.1 Treatability Testing Work Plan and Sampling and Analysis Plan (SAP)

If EPA determines that treatability testing is necessary, EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Within 30 days of EPA's request, Respondent shall submit a Treatability Testing Work Plan and a SAP, or amendments to the original RI/FS Work Plan, FSP and QAPP to EPA for review and approval, with a copy to the IDEM, describing the Site background, the remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. Respondent shall document the DQOs for treatability testing as well. If pilot scale treatability testing is to be performed, the Treatability Study Work Plan shall describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a detailed health and safety plan. If testing is to be performed off-Site, the plans shall address all permitting requirements. The requirements of SAPs are outlined in Task 1.2.2 of this RI/FS SOW.

#### 5.2.2 Treatability Study Health and Safety Plan

If the original Health and Safety Plan is not adequate for defining the activities to be performed during the treatability tests, Respondent shall submit a separate or amended Health and Safety Plan. Task 1.2.2.4 of this RI/FS SOW provides additional information on the requirements of the Health and Safety Plan. EPA reviews, but do not "approve" the Treatability Study Health and Safety Plan.

### 5.2.3 Treatability Study Evaluation Report

Following the completion of the treatability testing, Respondent shall analyze and interpret the testing results in a technical report to EPA and IDEM. Respondent shall submit the treatability study report according to the schedule in the Treatability Study Work Plan. This report may be a part of the Site Characterization Technical Memorandum, the RI Report or submitted as a separate deliverable. The Treatability Study Evaluation Report shall evaluate each technology's effectiveness, implementability and cost, and actual results as compared with predicted results. The report shall also evaluate full scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

#### TASK 6: DEVELOPMENT AND SCREENING OF ALTERNATIVES (Technical Memorandum)

Respondent shall develop and screen an appropriate range of remedial alternatives that they will evaluate. This range of alternatives shall include, as appropriate, options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but which vary in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a no-action alternative. Respondent shall perform the following activities as a function of the development and screening of remedial alternatives.

##### 6.1 Alternatives Development and Screening Deliverables

Respondent shall prepare and submit three technical memoranda for this task: a Remedial Action Objectives Technical Memorandum, an Alternative Arrays Technical Memorandum and a Comparative Analysis of Alternatives Memorandum.

###### 6.1.1 Remedial Action Objectives Technical Memorandum

Respondent shall submit a Remedial Action Objectives Technical Memorandum to EPA with a copy to the IDEM for EPA's review and approval. Respondent shall submit the Remedial Action Objectives Technical Memorandum at the same time as the Draft RI Report. Based on the baseline human health and ecological risk assessments, Respondent shall document the remedial action objectives in a Remedial Action Objectives Technical Memorandum. The remedial action objectives shall specify the contaminants and media of concern, potential exposure pathways and receptors, and contaminant level or range of levels (at particular

locations for each exposure route) that are protective of human health and the environment. Remedial action objectives shall be developed by considering the factors set forth in 40 C.F.R. § 300.430(e)(2)(i). Respondent shall incorporate EPA's comments on the Remedial Action Objectives Technical Memorandum in the Alternatives Screening Technical Memorandum.

#### 6.1.2 Alternatives Screening Technical Memorandum

Respondent shall submit an Alternatives Screening Technical Memorandum to EPA with a copy to IDEM for EPA's review and approval. The Alternatives Screening Technical Memorandum shall summarize the work performed and the results of each of the above tasks, and shall include an alternatives array summary. If EPA requires, Respondent shall modify the alternatives array to assure that it identifies a complete and appropriate range of viable alternatives to be considered in the detailed analysis. The Alternatives Screening Technical Memorandum shall document the methods, supporting rationale and results of the alternatives screening process. Respondent shall incorporate EPA's comments on the Alternatives Screening Technical Memorandum in the Comparative Analysis of Alternatives Technical Memorandum. Respondent shall submit the Alternatives Screening Technical Memorandum within 30 calendar days after receipt of EPA's comments on the Remedial Action Objectives Technical Memorandum.

##### 6.1.2.1 Develop General Response Actions

In the Alternatives Technical Memorandum, Respondent shall develop general response actions for each medium of interest including containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the EPA-approved remedial action objectives.

##### 6.1.2.2 Identify Areas or Volumes of Media

In the Alternatives Technical Memorandum, Respondent shall identify areas or volumes of media to which the general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. Respondent shall also take into account the chemical and physical characterization of OU2.

##### 6.1.2.3 Identify, Screen, and Document Remedial Technologies

In the Alternatives Technical Memorandum, Respondent shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be

implemented. Respondent shall refine applicable general response actions to specify remedial technology types. Respondent shall identify technology process options for each of the technology types concurrently with the identification of such technology types or following the screening of considered technology types. Respondent shall evaluate process options on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. Respondent shall summarize and include the technology types and process options in the Alternatives Screening Technical Memorandum. Whenever practicable, the alternatives shall also consider the CERCLA preference for treatment over conventional containment or land disposal approaches.

In the Alternatives Technical Memorandum, Respondent shall provide a preliminary list of alternatives to address contaminated soil, sediments, surface water, groundwater, and air contamination at OU2 that shall consist of, but is not limited to, treatment technologies, removal and off-site treatment/disposal, removal and on-site disposal, and in-place containment for soils, sediments, and wastes. See 40 C.F.R. § 300.430(e)(1)-(7). Respondent shall specify the reasons for eliminating any alternatives.

#### 6.1.2.4 Assemble and Document Alternatives

Respondent shall assemble the selected representative technologies into alternatives for each affected medium or operable unit. Together, all of the alternatives shall represent a range of treatment and containment combinations that address OU2 as a whole. Respondent shall prepare a summary of the assembled alternatives and their related ARARs for the Alternatives Screening Technical Memorandum. Respondent shall specify the reasons for eliminating alternatives during the preliminary screening process.

#### 6.1.2.5 Refine Alternatives

Respondent shall refine the remedial alternatives to identify the volumes of contaminated media the proposed processes will address, and size critical unit operations as necessary. Respondent shall collect sufficient information for an adequate comparison of alternatives. Respondent shall also modify the remedial action objectives for each chemical in each medium as necessary to incorporate any new human health and ecological risk assessment information presented in the Respondent's baseline human health and ecological risk assessment reports. Additionally, Respondent shall update ARARs as the remedial alternatives are refined.

#### 6.1.3 Conduct and Document Screening Evaluation of Each Alternative

Respondent may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for a detailed analysis. If necessary, Respondent shall conduct the screening of alternatives to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable. Respondent shall prepare an Alternatives Screening Technical Memorandum that summarizes the results and reasoning employed in screening; arrays the alternatives that remain after screening; and identifies the action-specific ARARs for the alternatives that remain after screening.

#### TASK 7: DETAILED ANALYSIS OF ALTERNATIVES (FS REPORT)

Respondent shall conduct and present a detailed analysis of remedial alternatives to provide EPA with the information needed to select a remedy for OU2.

##### 7.1 Detailed Analysis of Alternatives

Respondent shall conduct a detailed analysis of the remedial alternatives for OU2. The detailed analysis shall include an analysis of each remedial option against each of the nine evaluation criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis of all options using the same nine criteria as a basis for comparison.

###### 7.1.1 Apply Nine Criteria and Document Analysis

Respondent shall apply the nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will protect human health and the environment and meet remedial action objectives; will comply with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. Evaluation criteria include: (1) overall protection of human health and the environment and how the alternative meets each of the remedial action objectives; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) state acceptance; and (9) community acceptance. (Note: criteria 8 and 9 are considered after the RI/FS report has been released to the general public.) For each alternative, Respondent shall provide: (1) a description of the alternative that outlines

the waste management strategy involved and identifies the key ARARs associated with each alternative, and (2) a discussion of the individual criterion assessment. If Respondent does not have direct input on criteria (8) or (9), EPA will address those criteria.

#### 7.1.2 Compare Alternatives and Document the Comparison of Alternatives

Respondent shall compare each alternative against the other alternatives using the evaluation criteria as a basis of comparison. EPA will identify and select the preferred alternative. Respondent shall prepare a Comparative Analysis of Alternatives Technical Memorandum which summarizes the results of the comparative analysis and fully and satisfactorily addresses and incorporates EPA's comments on the Alternatives Screening Technical Memorandum. Respondent shall incorporate EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum in the draft FS Report. Respondent shall submit the Comparative Analysis of Alternatives Memorandum within 30 calendar days after receipt of EPA's comments on the Alternatives Screening Technical Memorandum.

#### 7.1.3. Alternatives Analysis for Institutional Controls

For any Alternatives that rely on Institutional Controls, Respondent shall include in the Alternatives Screening Technical Memorandum, Comparative Analysis of Alternative Technical Memorandum, and Feasibility Study an evaluation of the following: (1) Overall Protection of Human Health and the Environment including what specific institutional control components will ensure that the alternative will remain protective and how these specific controls will meet remedial action objectives; (2) Compliance with ARARs; (3) Long Term Effectiveness including the adequacy and reliability of institutional controls and how long the institutional control must remain in place; (4) Short Term Effectiveness including the amount of time it will take to impose the Institutional Control; (5) Cost including the cost to implement, maintain, monitor and enforce the institutional control; and (6) State and Community acceptance of the Institutional Control.

### 7.2 Feasibility Study Report

Within 60 days after receipt of EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum, Respondent shall prepare and submit a draft FS Report to EPA for its review pursuant to Section 2. The FS report shall summarize the development and screening of the remedial alternatives and present the detailed analysis of remedial alternatives. In addition, the FS Report shall also include the information EPA will need to prepare relevant sections of the Record of Decision (ROD) for OU2.



## TASK 8: PROGRESS REPORTS

Respondent shall submit monthly written progress reports to EPA and the IDEM concerning actions undertaken pursuant to the RI/FS ASAOC and this RI/FS SOW, beginning 30 calendar days after the effective date of the RI/FS ASAOC, until the termination of the RI/FS ASAOC, unless otherwise directed in writing by the RPM. These reports shall include, but not be limited to, a description of all significant developments during the preceding period, including the specific work that was performed and any problems that were encountered; a paper and electronic copies (formatted according to EPA specifications) and summary of the analytical data that was received during the reporting period; and the developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and actual or planned resolutions of past or anticipated problems. Monthly progress reports will summarize the field activities conducted each month including, but not limited to: drilling and sample locations, depths and descriptions; boring logs; sample collection logs; field notes; problems encountered; solutions to problems; a description of any modifications to the procedures outlined in the RI/FS Work Plan, the FSP, QAPP or Health and Safety Plan, with justifications for the modifications; a summary of all data received during the reporting period and the analytical results; and upcoming field activities. In addition, Respondent shall provide the RPM or the entity the RPM designates with all laboratory data within the monthly progress reports and in no event later than 60 days after samples are shipped for analysis.

**EXHIBIT A**  
**SCHEDULE FOR MAJOR DELIVERABLES**

DELIVERABLE	DUE DATE
TASK 1.2.2 - RI/FS Planning Documents, including Work Plan/Field Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan	RI/FS Planning documents due 60 calendar days after the effective date of the RI/FS ASAOC. Final RI/FS Planning Documents due 30 days after EPA notification of deficiencies pursuant to Section 2 of the RI/FS SOW and Section IX of the RI/FS ASAOC.
Task 3 - Site Characterization Technical Information	To be included in the monthly Progress Reports.
TASK 4 - RI Report	Draft RI Report due 60 calendar days following receipt of the last set of analytical data collected as part of the RI.  Final RI Report due 30 calendar days after receipt of U.S. EPA's notification of deficiencies pursuant to Section 2 of this RI/FS SOW and Section IX of the RI/FS ASAOC.
TASK 5.1 (if applicable) - Candidate Technologies and Testing Needs Technical Memorandum	60 calendar days following EPA approval of the Final Work Plan/Field Sampling Plan.
TASK 5.2.1 (if applicable) - Draft and Final Treatability Testing Work Plan and SAP or Amendments to the Original RI/FS Work Plan, FSP and/or QAPP.	Within 30 days of request of EPA.
TASK 5.2.2 (if applicable) - Draft and Final Treatability Testing Health and Safety Plan or Amendment to the Original Health and Safety	Within 30 days of request of EPA.

DELIVERABLE	DUE DATE
TASK 5.2.3 (if applicable) - Draft and Final Treatability Study Evaluation Report	With the Site Characterization Technical Memorandum, the RI Report (Task 4), or as EPA approves in the Work Plan/Field Sampling Plan.
TASK 6.1.1 - Remedial Action Objectives Technical Memorandum	With the draft RI Report (Task 4).
TASK 6.1.2 - Alternatives Screening Technical Memorandum	60 calendar days after receipt of EPA's comments on the Remedial Action Objectives Technical Memorandum.
TASK 7.1.2 - Comparative Analysis of Alternatives Technical Memorandum	30 calendar days after receipt of EPA's comments on the Alternatives Screening Technical Memorandum.
Task 7.2 - FS Report	60 calendar days after receipt of EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum. Final FS Report due 60 calendar days after receipt of EPA's notification of deficiency on the draft FS Report pursuant to Section 2 of the RI/FS SOW and Section IX of the RI/FS ASAOC.
TASK 8 - Monthly Progress Reports	On the 15th day of each month or the first business day after the 15th of the month commencing 30 calendar days after the effective date of the RI/FS ASAOC.
Miscellaneous Documents	In accordance with the submittal date the RPM provides.

## **EXHIBIT B PARTIAL LIST OF GUIDANCE**

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process. The majority of these guidance documents, and additional applicable guidance documents, may be downloaded from the following websites:

<http://www.epa.gov/superfund/pubs.htm> (General Superfund)  
<http://clu.in.org> (Site Characterization, Monitoring and Remediation)  
<http://www.epa.gov/ORD/NRMRL/Pubs> (Site Characterization and Monitoring)  
[http://www.epa.gov/quality/qa\\_docs.html#guidance](http://www.epa.gov/quality/qa_docs.html#guidance) (Quality Assurance)  
<http://www.epa.gov/superfund/programs/risk/toolthh.htm> (Risk Assessment - Human)  
<http://www.epa.gov/superfund/programs/risk/tooleco.htm> (Ecological Risk Assessment)  
<http://www.epa.gov/superfund/programs/lead> (Risk Assessment - Lead)  
<http://cfpub.epa.gov/ncea> (Risk Assessment - Exposure Factors/Other)  
<http://www.epa.gov/nepis/srch.htm> (General Publications Clearinghouse)  
<http://www.epa.gov/clariton/clhtml/pubtitle.html> (General Publications Clearinghouse)

1. The (revised) National Contingency Plan;
2. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.3-01, EPA/540/G-89/004, October 1988.
3. Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites, EPA, Office of Emergency and Remedial Response, EPA/540/P-91/001, February 1991.
4. Implementing Presumptive Remedies, EPA, Office of Emergency and Remedial Response, EPA-540-R-97-029, October 1997.
5. Presumptive Remedy for CERCLA Municipal Landfill Sites, EPA, OSWER Directive No. 9355.0-49FS, EPA-540-F-93-035, September 1993.
6. Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide, EPA, OSWER 9355.3-18FS, EPA/540/F-95/009, August 1995.
7. Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites, OSWER 9283.1-12, EPA-540-R-96-023, October 1996.
8. Field Analytical and Site Characterization Technologies Summary of Applications, U.S. EPA, EPA-542-F-97-024, November 1997.
9. CLU-IN Hazardous Waste Clean-Up Information World Wide Web Site, EPA, EPA-542-F-99-002, February 1999.

10. Field Sampling and Analysis Technology Matrix and Reference Guide, EPA, EPA-542-F-98-013, July 1998.
11. Subsurface Characterization and Monitoring Techniques: A Desk Reference Guide, Volumes 1 and 2, EPA, EPA/625/R-93/003, May 1993.
12. Use of Airborne, Surface, and Borehole Geophysical Techniques at Contaminated Sites: A Reference Guide, EPA, EPA/625/R-92/007(a,b), September 1993.
13. Innovations in Site Characterization: Geophysical Investigation at Hazardous Waste Sites, EPA, EPA-542-R-00-003, August 2000.
14. Innovative Remediation and Site Characterization Technology Resources, EPA, OSWER, EPA-542-F-01-026b, January 2001.
15. Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells, EPA, EPA/600/4-89/034, 1991.
16. Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers, U.S. EPA, EPA-542-S-02-001, May 2002.
17. Ground Water Issue: Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA, EPA/540/S-95/504, April 1996.
18. Superfund Ground Water Issue: Ground Water Sampling for Metals Analysis, EPA, EPA/540/4-89/001, March 1989.
19. Resources for Strategic Site Investigation and Monitoring, EPA, OSWER, EPA-542- F-010030b, September 2001.
20. Region 5 Framework for Monitored Natural Attenuation Decisions for Groundwater, U.S. EPA Region 5, September 2000.
21. Ground Water Issue: Suggested Operating Procedures for Aquifer Pumping Tests, U.S. EPA, OSWER, EPA/540/S-93/503, February 1993.
22. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, EPA, EPA/600/R-98/128, September 1998.
23. Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites, EPA, OSWER Directive 9200.4-17P, April 21, 1999.

24. Ground Water Issue: Fundamentals of Ground-Water Modeling, EPA, OSWER, EPA/540/S-92/005, April 1992.
25. Assessment Framework for Ground-Water Model Applications, EPA, OSWER Directive #9029.00, EPA-500-B-94-003, July 1994.
26. Ground-Water Modeling Compendium - Second Edition: Model Fact Sheets, Descriptions, Applications and Cost Guidelines, EPA, EPA-500-B-94-004, July 1994.
27. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents, EPA, Office of Solid Waste and Emergency Response, OSWER Directive No. 9200.1-23P, EPA 540-R-98-031, July 1999.
28. Region 5 Instructions on the Preparation of A Superfund Division Quality Assurance Project Plan Based on EPA QA/R-5, Revision 0, EPA Region 5, June 2000.
29. Guidance for the Data Quality Objectives Process (QA-G-4), EPA, EPA/600/R-96/055, August 2000.
30. Guidance for the Data Quality Objectives Process for Hazardous Waste Sites (QA/G-4HW), EPA, EPA/600/R-00/007, January 2000.
31. Guidance for the Preparation of Standard Operating Procedures (QA-G-6), EPA, EPA/240/B-01/004, March 2001.
32. EPA Requirements for Quality Management Plans (QA/R-2), EPA, EPA/240/B-01/002, March 2001.
33. EPA Requirements for QA Project Plans (QA/R-5), EPA, EPA/240/B-01/003, March 2001.
34. Guidance for Quality Assurance Project Plans (QA/G-5), EPA, EPA/600/R-98/018, February 1998.
35. Users Guide to the EPA Contract Laboratory Program, EPA, Sample Management Office, OSWER Directive No. 9240.0-01D, January 1991.
36. Technical Guidance Document: Quality Assurance and Quality Control for Waste Containment Facilities, EPA, EPA/600/R-93/182, 1993.
37. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part A), EPA, EPA/540/1-89/002, December 1989.

38. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals), EPA, EPA/540/R-92/003, OSWER Publication 9285.7-01B, December 1991.
39. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part C - Risk Evaluation of Remedial Alternatives), EPA, Office of Emergency and Remedial Response, Publication 9285.7-01C, October, 1991.
40. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part D - Standardized Planning, Reporting, and Review of Superfund Risk Assessments), EPA, Office of Emergency and Remedial Response, Publication 9285.7-47, December 2001.
41. Risk Assessment Guidance for Superfund: Volume III - Part A, Process for Conducting Probabilistic Risk Assessment, EPA, OSWER Publication 9285.7-45, EPA-540-R-02-002, December 2001.
42. Policy for Use of Probabilistic in Risk Assessment at the U.S. Environmental Protection Agency, EPA, Office of Research and Development, 1997.
43. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors, EPA, OSWER Directive 9285.6-03, March 25, 1991.
44. Exposure Factors Handbook, Volumes I, II, and III, EPA, EPA/600/P-95/002Fa,b,c, August 1997.
45. Supplemental Guidance to RAGS: Calculating the Concentration Term, EPA, OSWER Publication 9285.7-08I, May 1992.
46. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, EPA, OSWER Directive 9355.4-12, EPA/540/F-94/043, July 14, 1994.
47. Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, EPA, OSWER Directive 9200.4-27, EPA/540/F-98/030, August 1998.
48. Guidance Manual for the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, EPA, OSWER Publication 9285.7-15-1, February 1994; and associated, clarifying Short Sheets on IEUBK Model inputs, including but not limited to OSWER 9285.7-32 through 34, as listed on the OSWER lead internet site at [www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm).
49. Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, Version 0.99D, NTIS PB94-501517, 1994 or Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, Windows© version, 2001,

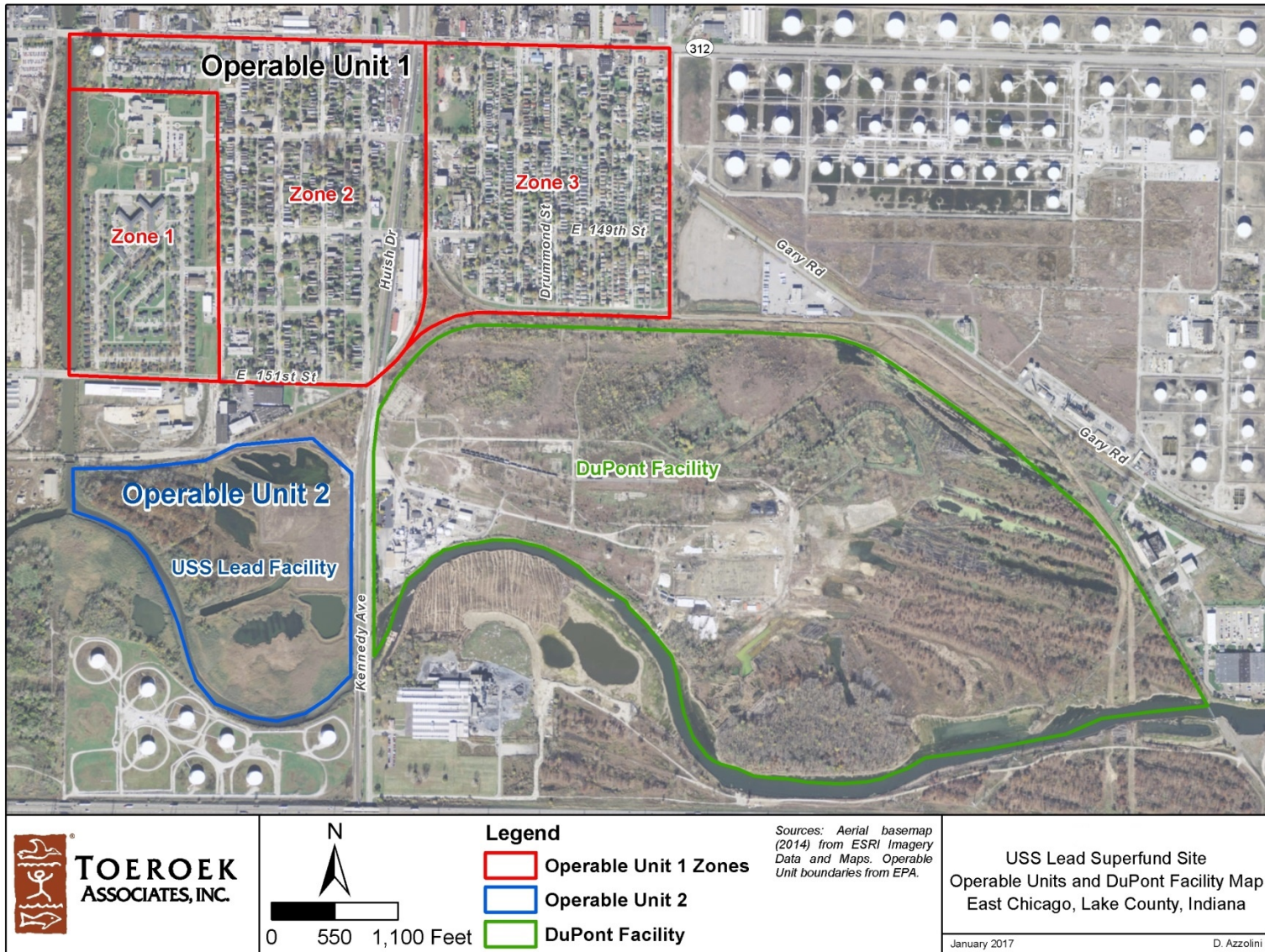
50. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions, EPA, OSWER Directive 9355.0-30, April 22, 1991.
51. Performance of Risk Assessments in Remedial Investigation /Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs), OSWER Directive No. 9835.15, August 28, 1990.
52. Supplemental Guidance on Performing Risk Assessments in Remedial Investigation Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs), OSWER Directive No. 9835.15(a), July 2, 1991.
53. Role of Background in the CERCLA Cleanup Program, EPA, OSWER 9285.6-07P, April 26, 2002.
54. Soil Screening Guidance: User's Guide, EPA, OSWER Publication 9355.4-23, July 1996.
55. Soil Screening Guidance: Technical Background Document, EPA, EPA/540/R95/128, May 1996.
56. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (Peer Review Draft), EPA, OSWER Publication 9355.4-24, March 2001.
57. Ecological Risk Assessment Guidance for Superfund: Process for Designing & Conducting Ecological Risk Assessments, EPA, OSWER Directive 9285.7-25, EPA-540-R-97-006, February 1997.
58. Guidelines for Ecological Risk Assessment, EPA, EPA/630/R-95/002F, April 1998.
59. The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments, EPA, OSWER Publication 9345.0-14, EPA/540/F-01/014, June 2001.
60. Ecotox Thresholds, EPA, OSWER Publication 9345.0-12FSI, EPA/540/F-95/038, January 1996.
61. Issuance of Final Guidance: Ecological Risk Assessment and Risk Management Principles for Superfund Sites, EPA, OSWER Directive 9285.7-28P, October 7, 1999.
62. Guidance for Data Usability in Risk Assessment (Quick Reference Fact Sheet), OSWER 9285.7-05FS, September, 1990.
63. Guidance for Data Usability in Risk Assessment (Part A), EPA, Office of Emergency and Remedial Response, Publication 9285.7-09A, April 1992.



64. Guide for Conducting Treatability Studies Under CERCLA, EPA, EPA/540/R-92/071a, October 1992.
65. CERCLA Compliance with Other Laws Manual, Two Volumes, EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9234.1-01 and -02, EPA/540/G-89/009, August 1988.
66. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA, Office of Emergency and Remedial Response, (Interim Final), OSWER Directive No. 9283.1-2, EPA/540/G-88/003, December 1988.
67. Considerations in Ground-Water Remediation at Superfund Sites and RCRA Facilities - Update, EPA, OSWER Directive 9283.1-06, May 27, 1992.
68. Methods for Monitoring Pump-and-Treat Performance, EPA, EPA/600/R-94/123, June 1994.
69. Pump-and-Treat Ground-Water Remediation A Guide for Decision Makers and Practitioners, EPA, EPA/625/R-95/005, July 1996.
70. Ground-Water Treatment Technology Resource Guide, EPA, OSWER, EPA-542-B-94/009, September 1994.
71. Land Use in the CERCLA Remedy Selection Process, EPA, OSWER Directive No. 9355.7-04, May 25, 1995.
72. Reuse Assessments: A Tool To Implement The Superfund Land Use Directive, EPA, OSWER 9355.7-06P, June 4, 2001.
73. Reuse of CERCLA Landfill and Containment Sites, EPA, OSWER 9375.3-05P, EPA-540-F-99-015, September 1999.
74. Reusing Superfund Sites: Commercial Use Where Waste is Left on Site, EPA, OSWER 9230.0-100, February 2002.
75. Covers for Uncontrolled Hazardous Waste Sites, EPA, EPA/540/2-85/002, 1985.
76. Technical Guidance Document: Final Covers on Hazardous Waste Landfills and Surface Impoundments, EPA, OSWER, EPA/530-SW-89-047, July 1989.
77. Engineering Bulletin: Landfill Covers, EPA, EPA/540/S-93/500, 1993.
78. Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites, U.S. EPA OSWER Directive 9285.6-08, February 12, 2002.

79. Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups, EPA, OSWER 9355.0-74FS-P, EPA/540-F-00-005, September 29, 2000.
80. Health and Safety Requirements of Employees Employed in Field Activities, EPA, Office of Emergency and Remedial Response, EPA Order No. 1440.2, July 12, 1981.
81. OSHA Regulations in 29 CFR 1910.120, Federal Register 45654, December 19, 1986.
82. Standard Operating Safety Guides, PB92-963414, June 1992.
83. Community involvement in Superfund: A Handbook, EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9230.0#3B June 1988; and OSWER Directive No. 9230.0-3C, January 1992.

**APPENDIX B**  
**MAP OF THE USS LEAD SITE**

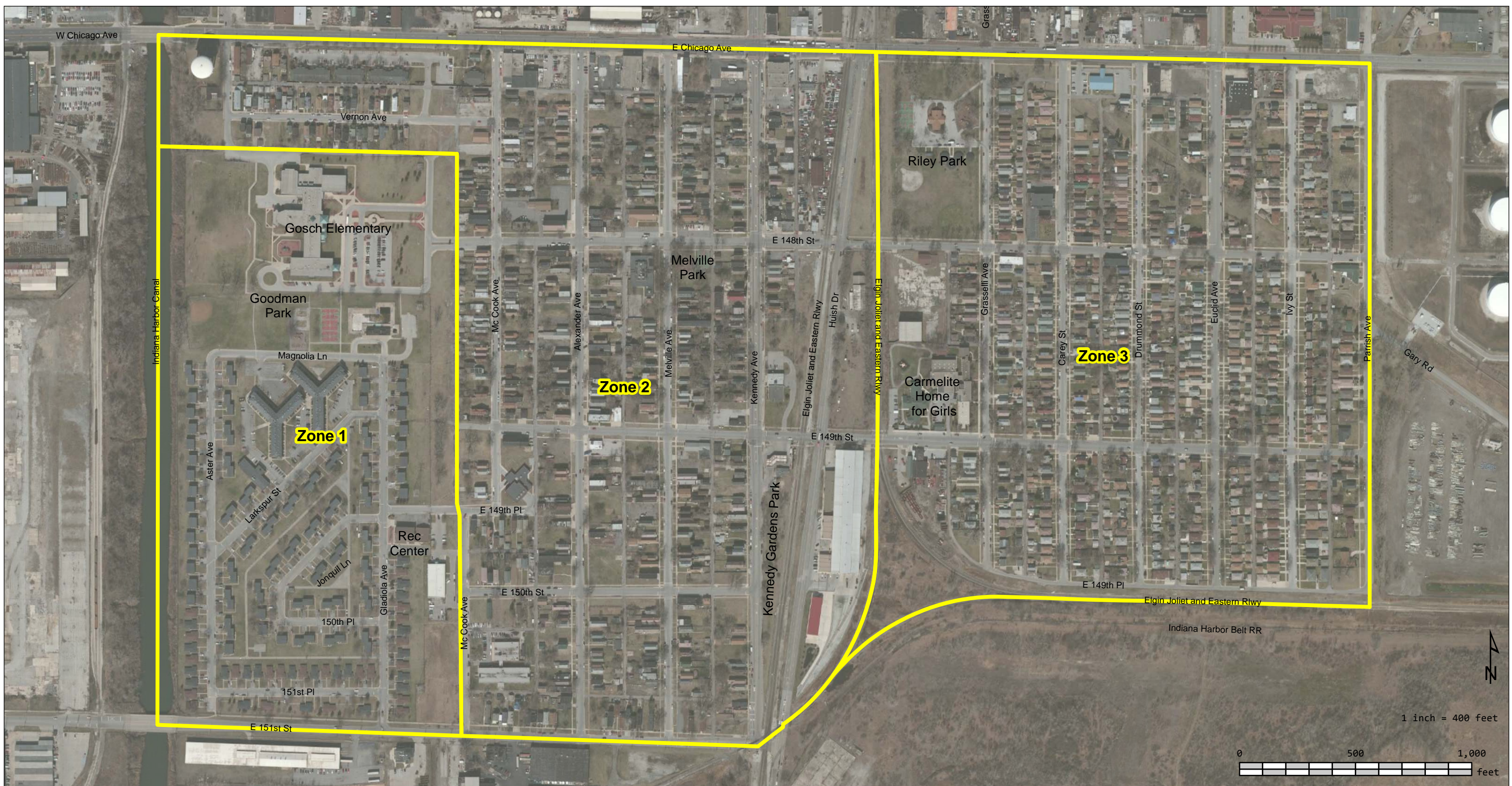


**Appendix B**  
**Map of the USS Lead Site**  
**(showing OU1 and OU2)**

## **APPENDIX C**

### **MAP OF THREE ZONES IN OU1**





 Zone

Basemap source: Esri



US SMELTER & LEAD REFINERY  
LAKE COUNTY, EAST CHICAGO, INDIANA

**Appendix C**  
**Map of Three Zones in OU1**

EPA REGION 5 RAC 2 | REVISION 0 | JULY 2014





APPENDIX D  
(Form of Financial Assurance)

**CORPORATE GUARANTEE BY MUELLER INDUSTRIES, INC. FOR  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY OF OPERABLE UNIT 2  
OF THE U.S. SMELTER AND LEAD REFINERY, INC. SUPERFUND SITE**

Guarantee made this **[insert date]** by Mueller Industries, Inc., a business corporation organized under the laws of the State of Delaware (“Guarantor”), to the United States Environmental Protection Agency (“EPA”). This Guarantee is made on behalf of U.S. Smelter and Lead Refinery, Inc. (“Respondent”), which is a subsidiary of Mining Remedial Recovery Company, which is a subsidiary of Arava Natural Resources Company, Inc., which is a subsidiary of Guarantor.

**RECITALS**

Whereas, under an Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study of Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site, dated **[insert date]**, EPA Docket No. **[insert docket no.]** (hereinafter, the “RI/FS ASAOC”), between Respondent and EPA, relating to Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site (“USS Lead Site” or “Site”) located in East Chicago, Indiana, entered pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675, Respondent is required to perform the “RI/FS Work” as defined in the RI/FS ASAOC (hereinafter, the “RI/FS Work”) and to fulfill its other obligations as set forth therein.

Whereas, the RI/FS ASAOC requires Respondent to provide financial assurance to EPA to ensure completion of the RI/FS Work at the Site.

Whereas, in order to provide part or all of such financial assurance required by the RI/FS ASAOC, Respondent has agreed to provide EPA with a guarantee, issued by Guarantor, of Respondent’s obligations arising under the RI/FS ASAOC, all as set forth more fully in this Guarantee.

Whereas, Guarantor meets or exceeds the financial test criteria as specified in the RI/FS ASAOC and attached as Exhibits A and B and agrees to comply with the reporting and notification requirements for guarantors as specified in the RI/FS ASAOC and this Guarantee.

**AGREEMENT**

1. For value received from Respondent, Guarantor guarantees to EPA that, in the event that Respondent fails to pay for or perform the RI/FS Work as required by the RI/FS ASAOC, Guarantor shall do so or 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 RI/FS Work to be performed as of such date, as determined by EPA. If the sum of (1) what Guarantor already has provided for the RI/FS Work and (2) the funds that EPA demands under this Paragraph exceed \$1,000,000, Guarantor may invoke the dispute resolution provisions of the RI/FS ASAOC (Section XVII) to dispute EPA's estimated cost of the remaining RI/FS Work. Guarantor shall invoke dispute resolution within 7 days of receipt of EPA's demand for funds under this Paragraph.

2. For so long as this Guarantee is in effect, within 90 days after the close of each fiscal year of Guarantor, Guarantor shall submit to EPA: (a) a letter signed by Guarantor's chief financial officer certifying Guarantor's compliance with the financial test criteria set forth in the RI/FS ASAOC's Section XXVII (Financial Assurance); (b) a copy of Guarantor's audited financial statements for its latest completed fiscal year, and a copy of Guarantor's independent certified public accountant's report on examination of such financial statements, which report on examination shall be unqualified or, if qualified, shall have been approved in writing by EPA; and (c) a special report from Guarantor's independent certified public accountant to Guarantor attesting to Guarantor's compliance with the financial test criteria set forth in the RI/FS ASAOC's Section XXVII (Financial Assurance).

3. Guarantor agrees that if, at the end of any fiscal year before termination of this Guarantee, Guarantor fails to meet the financial test criteria set forth in the RI/FS ASAOC, Guarantor shall send, within 90 days, by certified mail, notice to EPA and to Respondent that Guarantor intends to provide alternative financial assurance as specified in the RI/FS ASAOC in the name of Respondent. Within 120 days after the end of such fiscal year, Guarantor shall establish such financial assurance unless Respondent has done so.

4. Guarantor agrees to notify EPA, by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming Guarantor as debtor, within 10 days after commencement of the proceeding.

5. Guarantor agrees that, within 30 days after being notified by EPA of a determination that Guarantor no longer meets the financial test criteria set forth in the RI/FS ASAOC or that Guarantor is disallowed from continuing as a guarantor, Guarantor shall establish alternative financial assurance as specified in the RI/FS ASAOC, as applicable, in the name of Respondent unless Respondent has done so.

6. Guarantor agrees to remain bound under this Guarantee notwithstanding any or all of the following: amendment or modification of the RI/FS ASAOC or any documents, instruments or agreements executed in connection therewith, the extension or reduction of the time of performance of the RI/FS Work required by the RI/FS ASAOC, or any other modification or alteration of an obligation of Respondent pursuant to the RI/FS ASAOC.



7. Guarantor agrees to remain bound under this guarantee for as long as Respondent must comply with the applicable financial assurance requirements of the RI/FS ASAOC, except as provided in paragraph 8 of this Guarantee.

8. Guarantor may terminate this Guarantee by sending notice, by certified mail, to EPA and to Respondent, provided that this Guarantee may not be terminated unless and until Respondent obtains, and EPA approves, alternative financial assurance as specified in the RI/FS ASAOC.

9. Guarantor agrees that if Respondent fails to provide alternative financial assurance as specified in the RI/FS ASAOC and obtain written approval of such assurance from EPA within 90 days after a notice of cancellation by Guarantor is received by EPA from Guarantor, Guarantor shall provide such alternative financial assurance in the name of Respondent.

10. Guarantor expressly waives notice of acceptance of this Guarantee by EPA or by Respondent. Guarantor also expressly waives notice of amendments or modifications of the RI/FS ASAOC or any documents, instruments or agreements executed in connection therewith.

11. All notices, elections, approvals, demands, and requests required or permitted hereunder shall be given in writing to (unless updated from time to time) the following:

If to Guarantor:

Mueller Industries, Inc.  
Office of the General Counsel  
8285 Tournament Drive, Suite 150  
Memphis, TN 38125  
Phone: (901) 753-3299  
Email: [cjmiritello@muellerindustries.com](mailto:cjmiritello@muellerindustries.com)

E. Donald Elliott  
Thomas Brugato  
Covington & Burling LLP  
One CityCenter, 850 Tenth Street, NW  
Washington, DC 20001  
Email: [DElliott@cov.com](mailto:DElliott@cov.com)  
Email: [TBrugato@cov.com](mailto:TBrugato@cov.com)

If to Respondent:

Michael Baum, President  
U.S. Smelter and Lead Refinery, Inc.  
4780 Caterpillar Road, Unit C

Redding, CA 96003

If to EPA:

Katherine Thomas  
EPA Remedial Project Manager  
Region 5, US EPA  
77 W. Jackson Blvd. (SR-6J)  
Chicago, IL 60604-3590  
Phone: (312) 353-5878  
Email: [thomas.katherine@epa.gov](mailto:thomas.katherine@epa.gov)

**IN WITNESS WHEREOF**, the parties hereto, by their authorized representatives duly authorized, intending to be legally bound, have caused this Guarantee to be duly executed and delivered as of the date first above written.

Name of Guarantor: Mueller Industries, Inc.

Authorized signature for guarantor: \_\_\_\_\_

Name of person signing: \_\_\_\_\_

Title of person signing: \_\_\_\_\_

Contact information for signatory: \_\_\_\_\_

State of **[insert state]**

County of **[insert county]**

On this **[insert date]**, before me personally came **[insert name of Guarantor's signatory]** to me known, who, being by me duly sworn, did depose and say that she/he is **[insert title]** of Mueller Industries, Inc., the entity described in and which executed the above instrument; and that she/he signed her/his name thereto.

\_\_\_\_\_  
[Signature of Notary Public]

**EXHIBIT A (CFO Letter)**

**EXHIBIT B (CPA Report)**

**APPENDIX D**  
**EXHIBIT A**  
**SAMPLE CFO LETTERS**

**EXHIBIT A**  
**TO APPENDIX D**

**CERCLA Financial Assurance Financial Test:  
Sample CFO Letter (for Test Alternative 1)  
[To be printed on Mueller's letterhead]**

**[Insert date]**

U.S. Environmental Protection Agency Region 5  
c/o Acting Director, Superfund Division  
77 W. Jackson Blvd.  
Chicago, IL 60604

Dear Margaret M. Guerriero:

I am the chief financial officer of Mueller Industries, Inc. (the "Company"). This letter is in support of the Company's use of a financial test to demonstrate financial assurance for the obligations of the Company under that certain Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study of Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site, dated **[insert date]**, Docket No. **[insert Docket No.]** (hereinafter, the "RI/FS ASAOC"), between the Company and the U.S. Environmental Protection Agency ("EPA"), for the Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site ("USS Lead Site" or "Site") located in East Chicago, Indiana, entered pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675. This letter confirms the Company's satisfaction of certain financial criteria, as set forth more fully below, that makes the Company eligible to utilize the financial test as financial assurance under the RI/FS ASAOC.

1. The dollar amount of financial assurance required by Paragraph 96 of the RI/FS ASAOC and covered by the Company's use of the financial test is \$1,000,000.
2. The Company is a signatory or respondent to the following CERCLA settlements (other than the RI/FS ASAOC) or unilateral administrative orders, respectively, under which the Company is providing financial assurance to EPA through the use of a financial test. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to \$**[insert dollar amount]**, and is shown for each such settlement or order as follows: **[list each settlement and the corresponding financial assurance amount]**.
3. The Company is the owner and/or operator of the following facilities for which the Company has demonstrated financial assurance to EPA, states, and/or other regulators in the United States through the use of a test equivalent or substantially equivalent to the test certified herein, including but not limited to hazardous waste Treatment, Storage, and

Disposal (TSD) facilities under 40 CFR parts 264 and 265, Municipal Solid Waste Landfill (MSWLF) facilities under 40 CFR part 258, Underground Injection Control (UIC) facilities under 40 CFR part 144, Underground Storage Tank (UST) facilities under 40 CFR part 280, and Polychlorinated Biphenyl (PCB) storage facilities under 40 CFR part 761. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to \$[insert dollar amount], and is shown for each such facility as follows: **[list each facility and the corresponding financial assurance amount]**.

4. The Company guarantees to EPA, states, and/or other regulators in the United States the CERCLA settlement or unilateral administrative order obligations and/or the MSWLF, TSD, UIC, UST, PCB, and/or other facility obligations of the following guaranteed parties: **[insert information as necessary]**. The total dollar amount of such CERCLA settlement or order obligations and regulated facility obligations so guaranteed is equal, in the aggregate, to \$[insert dollar amount], and is shown for each such settlement, order, and/or facility as follows: **[list each settlement, order, and/or facility and the corresponding financial assurance amount]**.

5. The Company **[insert “is required” or “is not required”]** to file a Form 10K with the Securities and Exchange Commission for the Company’s latest fiscal year.

6. The Company’s fiscal year ends on **[insert month and day]**. I hereby certify that the figures for the following items marked with an asterisk are derived from the Company’s independently audited, year-end financial statements for its latest completed fiscal year, ended **[insert date]**, and further certify as follows:

A. The aggregate total of the dollar amounts shown in Paragraphs 1 through 4 above equals \$[insert dollar amount].

\*B. Company’s total liabilities equal: \$[insert dollar amount].

\*C. Company’s tangible net worth equals: \$[insert dollar amount].

\*D. Company’s net worth equals: \$[insert dollar amount].

\*E. Company’s current assets equal: \$[insert dollar amount].

\*F. Company’s current liabilities equal: \$[insert dollar amount].

G. Company’s net working capital [line E minus line F] equals: \$[insert dollar amount].

\*H. Sum of Company’s net income plus depreciation, depletion, and amortization equals: \$[insert dollar amount].



\*I. Company's total assets in the United States equal (required only if less than 90% of Company's assets are located in the United States): \$[insert dollar amount].

J. Is line C at least \$10 million? (Yes/No): [insert yes or no].

K. Is line C at least 6 times line A? (Yes/No): [insert yes or no].

L. Is line G at least 6 times line A? (Yes/No): [insert yes or no].

\*M. Are at least 90% of Company's assets located in the United States? (Yes/No): [insert yes or no]. If "No," complete line N.

N. Is line I at least 6 times line A? (Yes/No): [insert yes or no].

O. Is line B divided by line D less than 2.0? (Yes/No): [insert yes or no].

P. Is line H divided by line B greater than 0.1? (Yes/No): [insert yes or no].

Q. Is line E divided by line F greater than 1.5? (Yes/No): [insert yes or no].

I hereby certify that, to the best of my knowledge after thorough investigation, the information contained in this letter 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.

By [signature]: \_\_\_\_\_  
Printed name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact information: \_\_\_\_\_  
Date: \_\_\_\_\_

**CERCLA Financial Assurance Financial Test:  
Sample CFO Letter (for Test Alternative 2)  
[To be printed on Mueller's letterhead]**

**[Insert date]**

U.S. Environmental Protection Agency Region 5  
c/o Acting Director, Superfund Division  
77 W. Jackson Blvd.  
Chicago, IL 60604

Dear Margaret M. Guerriero:

I am the chief financial officer of Mueller Industries, Inc. (the "Company"). This letter is in support of the Company's use of a financial test to demonstrate financial assurance for the obligations of the Company under that certain Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study of Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site, dated **[insert date]**, Docket No. **[insert Docket No.]** (hereinafter, the "RI/FS ASAOC"), between the Company and the U.S. Environmental Protection Agency ("EPA"), for the Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Super Site ("USS Lead Site" or "Site") located in East Chicago, Indiana, entered pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675. This letter confirms the Company's satisfaction of certain financial criteria, as set forth more fully below, that makes the Company eligible to utilize the financial test as financial assurance under the RI/FS ASAOC.

1. The dollar amount of financial assurance required by Paragraph 96 of the RI/FS ASAOC and covered by the Company's use of the financial test \$1,000,000.
  
2. The Company is a signatory or respondent to the following CERCLA settlements (other than the RI/FS ASAOC) or unilateral administrative orders, respectively, under which the Company is providing financial assurance to EPA through the use of a financial test. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to \$**[insert dollar amount]**, and is shown for each such settlement or order as follows: **[list each settlement and the corresponding financial assurance amount]**.
  
3. The Company is the owner and/or operator of the following facilities for which the Company has demonstrated financial assurance to EPA, states, and/or other regulators in the United States through the use of a test equivalent or substantially equivalent to the test certified herein, including but not limited to hazardous waste Treatment, Storage, and Disposal (TSD) facilities under 40 CFR parts 264 and 265, Municipal Solid Waste Landfill (MSWLF) facilities under 40 CFR part 258, Underground Injection Control (UIC) facilities under 40 CFR part 144, Underground Storage Tank (UST) facilities under 40 CFR part 280, and Polychlorinated Biphenyl (PCB) storage facilities under

40 CFR part 761. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to \$[insert dollar amount], and is shown for each such facility as follows: [list each facility and the corresponding financial assurance amount].

4. The Company guarantees to EPA, states, and/or other regulators in the United States the CERCLA settlement or unilateral administrative order obligations and/or the MSWLF, TSD, UIC, UST, PCB, and/or other facility obligations of the following guaranteed parties: [insert information as necessary]. The total dollar amount of such CERCLA settlement or order obligations and regulated facility obligations so guaranteed is equal, in the aggregate, to \$[insert dollar amount], and is shown for each such settlement, order, and/or facility as follows: [list each settlement, order, and/or facility and the corresponding financial assurance amount].

5. The Company [insert “is required” or “is not required”] to file a Form 10K with the Securities and Exchange Commission for the Company’s latest fiscal year.

6. The Company’s fiscal year ends on [insert month and day]. I hereby certify that the figures for the following items marked with an asterisk are derived from the Company’s independently audited, year-end financial statements for its latest completed fiscal year, ended [insert date], and further certify as follows:

A. The aggregate total of the dollar amounts shown in Paragraphs 1 through 4 above equals \$[insert dollar amount].

B. The current rating of the Company’s senior unsecured debt is [insert as appropriate either: [AAA, AA, A, or BBB] as issued by Standard and Poor’s or [Aaa, Aa, A or Baa] as issued by Moody’s Investor Services].

\*C. Company’s tangible net worth equals: \$[insert dollar amount].

\*D. Company’s total assets in the United States equal (required only if less than 90% of Company’s assets are located in the United States.): \$[insert dollar amount].

E. Is line C at least 6 times line A? (Yes/No): [insert yes or no].

F. Is line C at least \$10 million? (Yes/No): [insert yes or no].

G. Are at least 90% of Company’s assets located in the United States? (Yes/No): [insert yes or no]. If “No,” complete line H.

H. Is line D at least 6 times line A? (Yes/No): [insert yes or no].

I hereby certify that, to the best of my knowledge after thorough investigation, the information contained in this letter 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.

By [signature]: \_\_\_\_\_  
Printed name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact information: \_\_\_\_\_  
Date: \_\_\_\_\_

**APPENDIX D**  
**EXHIBIT B**  
**SAMPLE CPA REPORT**

EXHIBIT B  
TO APPENDIX D

**CERCLA Financial Assurance Financial Test:  
Sample CPA Report (for Test Alternative 1)  
[To be printed on CPA's letterhead]**

**Independent Accountants' Report  
on Applying Agreed-Upon Procedures**

To the Board of Directors and Management of Mueller Industries, Inc.:

We have performed the procedures outlined below, which were agreed to by Mueller Industries, Inc. (the "Company"), to assist the Company in confirming selected financial data contained in the attached letter from **[insert name of CFO]**, the Company's Chief Financial Officer, dated **[insert date]**, to Margaret M. Guerriero, Acting Director, Superfund Division, U.S. Environmental Protection Agency Region 5 (the "CFO Letter"). We have been advised by the Company that the CFO Letter has been or will be submitted to the United States Environmental Protection Agency ("EPA") in support of the Company's use of a financial test to demonstrate financial assurance for the Company's obligations under that certain Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study of Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site, dated **[insert date]**, Docket No. **[insert Docket No.]** (hereinafter, the "RI/FS ASAOC"), between the Company EPA, for the Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Super Site ("USS Lead Site" or "Site") located in East Chicago, Indiana, entered pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675. The procedures outlined below were performed solely to assist the Company in complying with the financial assurance requirements contained in the RI/FS ASAOC.

This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of those parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures we performed and our associated findings are as follows:

1. We confirm that we have audited the consolidated financial statements of the Company as of and for the fiscal year ended **[insert date]** in accordance with United States generally accepted accounting principles (such audited, consolidated financial statements, the "Audited Financials"). Our report dated **[insert date]**, with respect thereto, is included in the Company's **[insert year]** Annual Report on Form 10-K.

2. Using data set forth in the Audited Financials, we calculated the amount of the Company's total liabilities as of **[insert date]** as **[\$[insert dollar amount]**, by [adding total current liabilities of **[\$[insert dollar amount]** to total non-current liabilities of **[\$[insert dollar amount]**]. We compared the amount of the Company's total liabilities as so calculated with the amount set forth in Line 6(B) of the CFO Letter ("Total Liabilities"), and found such amounts to be in agreement.
3. Using data set forth in the Audited Financials, we calculated the amount of the Company's tangible net worth as of **[insert date]** as **[\$[insert dollar amount]**, by [subtracting the amount of net intangible assets of **[\$[insert dollar amount]** from the amount of total stockholders' equity of **[\$[insert dollar amount]**]. We compared the amount of the Company's tangible net worth as so calculated with the amount set forth in Line 6(C) of the CFO Letter ("Tangible Net Worth"), and found such amounts to be in agreement.
4. We compared the amount of the Company's net worth as of **[insert date]**, as defined and set forth in the Audited Financials and as calculated therein as **[\$[insert dollar amount]**, with the amount set forth in Line 6(D) of the CFO Letter ("Net Worth"), and found such amounts to be in agreement.
5. We compared the amount of the Company's total current assets as of **[insert date]**, as defined and set forth in the Audited Financials and as calculated therein as **[\$[insert dollar amount]**, with the amount set forth in Line 6(E) of the CFO Letter ("Current Assets"), and found such amounts to be in agreement.
6. We compared the amount of the Company's total current liabilities as of **[insert date]**, as defined and set forth in the Audited Financials and as calculated therein as **[\$[insert dollar amount]**, with the amount set forth in Line 6(F) of the CFO Letter ("Current Liabilities"), and found such amounts to be in agreement.
7. Using data set forth in the Audited Financials, we calculated the amount of the Company's net working capital as of **[insert date]** as **[\$[insert dollar amount]**, by [subtracting total current liabilities of **[\$[insert dollar amount]** from total current assets of **[\$[insert dollar amount]**]. We compared the amount of the Company's net working capital as so calculated with the amount set forth in Line 6(G) of the CFO Letter ("Net Working Capital"), and found such amounts to be in agreement.
8. Using data set forth in the Audited Financials, we calculated the sum of the Company's net income plus depreciation, depletion, and amortization as of **[insert date]** as **[\$[insert dollar amount]**, by [adding depreciation, depletion, and amortization of property and intangibles of **[\$[insert dollar amount]** to net income of **[\$[insert dollar amount]**]. We compared the sum of the Company's net income plus depreciation, depletion, and amortization as so calculated with the amount set forth in Line 6(H) of the CFO Letter ("Net Income Plus Depreciation, Depletion, and Amortization"), and found such amounts to be in agreement.

9. **[Insert either:** “We compared the amount of the Company’s total assets located in the United States as of **[insert date]** of \$**[insert dollar amount]** (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) with the amount set forth in Line 6(I) of the CFO Letter, and found such amounts to be in agreement[.]” or “We calculated the percentage of Company assets located in the United States as of **[insert date]** by dividing the amount of the Company’s total assets located in the United States of \$**[insert dollar amount]** (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) by the amount of the Company’s total assets as defined and set forth in the Audited Financials, and found such percentage to be greater than 90%.”]

10. Our calculation of the amount of the Company’s tangible net worth (as set forth in Line 3 above) is **[insert either:** “greater than or equal to” or “less than”] \$10 million.

11. The dollar amount identified in Line 6(A) of the CFO Letter is hereinafter referred to as the “Financial Assurance Amount.” Our calculation of the amount of the Company’s tangible net worth (as set forth in Line 3 above) is **[insert either:** “greater than or equal to” or “less than”] an amount calculated as six times the Financial Assurance Amount.

12. Our calculation of the amount of the Company’s net working capital (as set forth in Line 7 above) is **[insert either:** “greater than or equal to” or “less than”] an amount calculated as six times the Financial Assurance Amount.

13. **[Include and complete Line 13 only if less than 90% of Company’s assets are located in the United States]** Our calculation of the amount of the Company’s total assets located in the United States (as set forth in Line 9 above) is **[insert either:** “greater than or equal to” or “less than”] an amount calculated as six times the Financial Assurance Amount.

14. Our calculation of the amount of the Company’s total liabilities (as set forth in Line 2 above) divided by our calculation of the amount of the Company’s net worth (as set forth in Line 4 above) is **[insert either:** “greater than or equal to” or “less than”] 2.0.

15. Our calculation of the sum of the Company’s net income plus depreciation, depletion, and amortization (as set forth in Line 8 above) divided by our calculation of the amount of the Company’s total liabilities (as set forth in Line 2 above) is **[insert either:** “greater than” or “less than or equal to”] 0.1.

16. Our calculation of the amount of the Company’s total current assets (as set forth in Line 5 above) divided by our calculation of the amount of the Company’s total current liabilities (as set forth in Line 6 above) is **[insert either:** “greater than” or “less than or equal to”] 1.5.

[Remainder of page left blank intentionally.]



The foregoing agreed-upon procedures do not constitute an audit of the Company's financial statements or any part thereof, the objective of which is the expression of opinion on the financial statements or a part thereof. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the Board of Directors and Management of the Company and is not intended to be and should not be used by anyone other than these specified parties; *provided, however*, that we acknowledge and agree that the Company may provide this report to EPA in support of the Company's financial assurance demonstration under the RI/FS ASAOC.

By [signature]: \_\_\_\_\_  
Printed name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact information: \_\_\_\_\_  
Date: \_\_\_\_\_

**CERCLA Financial Assurance Financial Test:  
Sample CPA Report (for Test Alternative 2)  
[To be printed on CPA's letterhead]**

**Independent Accountants' Report  
on Applying Agreed-Upon Procedures**

To the Board of Directors and Management of Mueller Industries, Inc.:

We have performed the procedures outlined below, which were agreed to by Mueller Industries, Inc. (the "Company"), to assist the Company in confirming selected financial data contained in the attached letter from **[insert name of CFO]**, the Company's Chief Financial Officer, dated **[insert date]**, to Margaret M. Guerriero, Acting Director, Superfund Division, U.S. Environmental Protection Agency Region 5 (the "CFO Letter"). We have been advised by the Company that the CFO Letter has been or will be submitted to the United States Environmental Protection Agency ("EPA") in support of the Company's use of a financial test to demonstrate financial assurance for the Company's obligations under that certain Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study of Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site, dated **[insert date]**, Docket No. **[insert Docket No.]** (hereinafter, the "RI/FS ASAOC"), between the Company and EPA, for the Operable Unit 2 of the U.S. Smelter and Lead Refinery, Inc. Super Site ("USS Lead Site" or "Site") located in East Chicago, Indiana, entered pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675. The procedures outlined below were performed solely to assist the Company in complying with the financial assurance requirements contained in the RI/FS ASAOC.

This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of those parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures we performed and our associated findings are as follows:

1. We confirm that we have audited the consolidated financial statements of the Company as of and for the fiscal year ended **[insert date]** in accordance with United States generally accepted accounting principles (such audited, consolidated financial statements, the "Audited Financials"). Our report dated **[insert date]**, with respect thereto, is included in the Company's **[insert year]** Annual Report on Form 10-K.
2. Using data set forth in the Audited Financials, we calculated the amount of the Company's tangible net worth as of **[insert date]** as \$**[insert dollar amount]**, by

[subtracting the amount of net intangible assets of \$[insert dollar amount] from the amount of total stockholders' equity of \$[insert dollar amount]]. We compared the amount of the Company's tangible net worth as so calculated with the amount set forth in Line 6(C) of the CFO Letter ("Tangible Net Worth"), and found such amounts to be in agreement.

3. **[Insert either:** "We compared the amount of the Company's total assets located in the United States as of [insert date] of \$[insert dollar amount] (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) with the amount set forth in Line 6(D) of the CFO Letter, and found such amounts to be in agreement[.]" or "We calculated the percentage of Company assets located in the United States as of [December 31, 20\_\_] by dividing the amount of the Company's total assets located in the United States of \$[insert dollar amount] (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) by the amount of the Company's total assets as defined and set forth in the Audited Financials, and found such percentage to be greater than 90%."]

4. Our calculation of the amount of the Company's tangible net worth (as set forth in Line 2 above) is **[insert either:** "greater than or equal to" or "less than"] \$10 million.

5. The dollar amount identified in Line 6(A) of the CFO Letter is hereinafter referred to as the "Financial Assurance Amount." Our calculation of the amount of the Company's tangible net worth (as set forth in Line 2 above) is **[insert either:** "greater than or equal to" or "less than"] an amount calculated as six times the Financial Assurance Amount.

6. **[Include and complete Line 6 only if less than 90% of Company's assets are located in the United States]** Our calculation of the amount of the Company's total assets located in the United States (as set forth in Line 3 above) is **[insert either:** "greater than or equal to" or "less than"] an amount calculated as six times the Financial Assurance Amount.

[Remainder of page left blank intentionally.]

The foregoing agreed-upon procedures do not constitute an audit of the Company's financial statements or any part thereof, the objective of which is the expression of opinion on the financial statements or a part thereof. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the Board of Directors and Management of the Company and is not intended to be and should not be used by anyone other than these specified parties; *provided, however*, that we acknowledge and agree that the Company may provide this report to EPA in support of the Company's financial assurance demonstration under the RI/FS ASAOC.

By [signature]: \_\_\_\_\_  
Printed name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact information: \_\_\_\_\_  
Date: \_\_\_\_\_