UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6
DALLAS, TX

IN THE MATTER OF:	§	
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	§	
	§	
	§	Consent Agreement and Final Order
	§	Docket No. RCRA-06-2021- 0931 thru 0940
	§	
	§	
RESPONDENTS	§	
	§	
	§	

CONSENT AGREEMENT AND FINAL ORDER

I. PRELIMINARY STATEMENT

1. This Consent Agreement and Final Order ("CAFO") is entered by the United States Environmental Protection Agency ("EPA" or "Complainant"), Region 6, and the following companies:

A. National Oilwell Varco L.P.
B. VSE Corporation
C. American Airlines, Inc.
D. Solar Turbines Incorporated
E. Goodrich Corporation
F. AAR Landing Gear Corporation
G. AV Task, Inc.
H. Varec Biogas Inc.
I. Honeywell International, Inc.
J. Kansas Dry Stripping Inc.

(collectively "Respondents" and individually a "Respondent") and concerns the US Technology Corporation site that is located at 6500 Grand Avenue, Fort Smith, Arkansas 72904 (the "Facility" or "Site").

2. Notice of the commencement of this action has been given to the State of Arkansas under Section 3008(a)(2) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6928(a)(2).[1]

3. In connection with EPA's delegation of RCRA authority to the State of Arkansas, the Arkansas Pollution Control and Ecology Commission has promulgated Rule 23 ("APC&EC Rule 23"). In addition to applicable federal regulations, APC&EC Rule 23 has been cited independently herein for the violation alleged in this CAFO.

4. For purposes of this proceeding only, Respondents admit the jurisdictional allegations herein; however, the Respondents neither admit nor deny the specific factual allegations and the alleged violation of law contained in this CAFO.

5. The Respondents explicitly waive any right to contest the allegations and their right to appeal the final order contained in this CAFO and, for purposes of this proceeding only, waive all defenses which have been raised or could have been raised to the claims set forth in the CAFO.

6. The CAFO resolves only the claim alleged herein, which relates to the spent blast media and related materials (collectively "SBM") which was picked up and transported by US Technology Corporation and/or its agents, contractors and business partners (collectively, "UST") from Respondents' facilities and which was delivered by UST to, or otherwise became

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1. On January 25, 1985, the State of Arkansas received final authorization for its base Hazardous Waste Management Program (50 FR 1513). Subsequent revisions have been made to the Arkansas Hazardous Waste Program and authorized by the EPA. Except as otherwise provided, all citations found within this order are to the "EPA-Approved Arkansas Statutory and Regulatory Requirements Applicable to the Hazardous Waste Management Program" dated October 2016, incorporated by reference under 40 C.F.R. § 272.201(c)(1)(i) effective on November 13, 2017. 82 Fed. Reg. 43189 (September 13, 2017); 40 C.F.R. 272.201: Arkansas State-Administered Program: Final Authorization. References and citations to the "EPA-Approved Arkansas Statutory and Regulatory Requirements Applicable to the Hazardous Waste Management Program" may vary slightly from the State of Arkansas' published version. The corresponding C.F.R. citations are also provided.

located at or emanated from, which references the activities at, from and/or to the Facility.

7. Except for any disposal/release caused by Respondents during the removal process described in this CAFO and its Appendix ("RCRA Compliance Narrative and Schedule"), upon completion of such removal process (the "Work"), Respondents have no further responsibilities to remove and/or to remediate hazardous waste and/or substances that were released, generated, stored and/or may have emanated from hazardous waste and/or substances generated and/or stored at the Facility. Instead, EPA will look to the United States Department of Defense to remove the SBM remaining at the Site after completion of the Work (4000 drums) and perform the final cleanup of the warehouse, and will look to the owner and operator of the Facility, Mr. Williams and any subsequent owner and operator, to address any other such releases and/or disposal upon the termination of this CAFO and its Appendix.

8. The Respondents consent to the issuance of this CAFO hereinafter recited, and acknowledge that there is a zero-assessment of civil penalty.

9. Respondents and Complainant, (together, the "Parties"), by the execution and filing of this CAFO, have agreed: 1) to resolve the potential violation alleged in this CAFO for the location listed in Paragraph 1 and Appendix I of this CAFO; 2) that Respondents will remove the amount of hazardous waste allocated by Complainant, which is set forth in Appendix I of this CAFO and in compliance with this CAFO, RCRA, and the regulations promulgated thereunder; and 3) that Complainant shall bear no cost and/or liabilities for Respondents' removal activities involving the hazardous waste at or from the Facility .

10. By their signatures to this CAFO, the Parties agree to the use of electronic signatures for

this matter. The EPA and Respondents further agree to electronic service of this CAFO, pursuant to 40 C.F.R. § 22.6, by email to the following addresses: EPA-Moncrieffe.marcia@epa.gov, and for Respondents as follows:

A. National Oilwell Varco L.P., Jennifer.Moyers@nov.com
B. VSE Corporation, DHPetkoff@vsecorp.com
C. American Airlines, Inc., Vincent.van.Panhuys@aa.com
D. Solar Turbines Incorporated, Durango_Roberto_M@cat.com
E. Goodrich Corporation, Kristen.Sherman@rtx.com
F. AAR Landing Gear Corporation, Jmore@schiffhardin.com
G. AV Task, Inc., Joe.Wilson@avionavtask.com
H. Varec Biogas Inc., John.Gillam@ovivowater.com
I. Honeywell International, Inc., Charles.Anthony@honeywell.com
J. Kansas Dry Stripping Inc., sales@ksdrystripping.com

II. JURISDICTION

11. This CAFO is issued by EPA, Region 6, pursuant to Section 3008(a) of the RCRA, 42 U.S.C. § 6928(a), as amended by the Hazardous and Solid Waste Amendments of 1984 ("HSWA") and is simultaneously commenced and concluded through the issuance of this CAFO under 40 C.F.R. §§ 22.13(b) and 22.18(b)(2) and (3).

12. Respondents agree to undertake and complete all actions required by the terms and conditions of this CAFO. In any action by EPA or the United States to enforce the terms of this CAFO, Respondents agree not to contest the authority or jurisdiction of the Regional Administrator of EPA, Region 6, to issue or enforce this CAFO, and agree not to contest the validity of this CAFO or its terms or conditions.

III. STATEMENT OF PURPOSE

13. In entering into this CAFO, the mutual objectives of EPA, Region 6 and Respondents are to remedy, and/or prevent the potential endangerment to human health and/or the environment from activities involving solid waste and hazardous waste, and to ensure that the

injunctive relief that Respondents will complete as described in the Section VI (Compliance Order) and Appendix I of this CAFO are protective of human health and the environment.

IV. STATUTORY AND REGULATORY BACKGROUND

14. Federal regulation of hazardous waste is primarily based on RCRA, enacted on October 21, 1976 to amend the Solid Waste Disposal Act, and on the Hazardous and Solid Waste Amendments ("HSWA") enacted by Congress in 1984 to further amend the Solid Waste Disposal Act. RCRA establishes a "cradle-to-grave" program to be administered by the Administrator of EPA and authorized States for regulating the generation, transportation, treatment, storage, and disposal of hazardous waste. See 42 U.S.C. § 6901 *et seq.*

15. RCRA's Subchapter III (RCRA §§ 3001-3023, 42 U.S.C. §§ 6921-6940, known as "Subtitle C") required EPA to promulgate regulations establishing performance standards applicable to facilities that generate, transport, treat, store, or dispose of hazardous wastes. Together, RCRA Subtitle C and its implementing regulations, set forth at 40 C.F.R. Parts 260 – 279, comprise EPA's RCRA hazardous waste program.

16. RCRA Section 3006, 42 U.S.C. § 6926, allows the Administrator to authorize a State to administer its own hazardous waste program in lieu of the federal program when the Administrator deems the State program to be equivalent to and consistent with the federal program.

17. Pursuant to its authority under Subtitle C of RCRA, 42 U.S.C. § 6922(a), EPA has promulgated regulations applicable to solid and hazardous waste generators at 40 C.F.R. Parts 261 and 262; to owner/operators of hazardous waste facilities at 40 C.F.R. Parts 264 and 265; and to land disposal of solid and hazardous waste at 40 C.F.R. Part 268. The Arkansas Department of Energy and Environment's Division of Environmental Quality ("AR DEQ"), like

EPA, has promulgated regulations applicable to these persons and practices, which are found at Arkansas Pollution Control and Ecology Commission Rule 23 ("APC&EC Rule 23"). Unless specified otherwise, AR DEQ has incorporated by reference all federal regulations cited in this Complaint.

18. Although EPA has granted the State authority to enforce its own hazardous waste Program, EPA retains jurisdiction and authority to initiate an independent enforcement action, pursuant to Section 3008(a)(2) of RCRA, 42 U.S.C. § 6928(a)(2).

19. As the authorized provisions of the Arkansas's hazardous waste program operate in lieu of the federal RCRA program, the citations for the violation of those authorized provisions alleged herein will be the authorized Arkansas program; however, for ease of reference, the federal citations will follow in parentheses.

20. APC&EC Rule 23 § 261.2, [40 C.F.R. § 261.2], defines a "solid waste" as any discarded material that is not otherwise excluded under APC&EC Rule 23 § 261.4(a), [40 C.F.R. § 261.4(a)], or that is not excluded by variance. A discarded material is any material which is abandoned, recycled, inherently waste-like, or a military munitions. Materials are solid waste, as defined in APC&EC Rule 23 § 261.2, [40 C.F.R. § 261.2], if they are abandoned by being disposed of, burned or incinerated, or accumulated, stored, or treated (but not recycled) before, or in lieu of, being abandoned by being disposed of, burned, or incinerated.

21. A solid waste is a hazardous waste if it is not excluded from regulation as a hazardous waste under APC&EC Rule 23 § 261.4(b), [40 C.F.R. § 261.4(b)], and it exhibits any of the characteristics of hazardous waste identified in APC&EC Rule 23 § Part 261, Subpart C, [40 C.F.R. Part 261, Subpart C], or it is listed in APC&EC Rule 23 § Part 261, Subpart D, [C.F.R. Part 261, Subpart D].

22. Characteristic hazardous wastes are assigned "D" codes in APC&EC Rule 23 § Part 261, Subpart C, [40 C.F.R. Part 261, Subpart C], depending on the specific hazardous characteristic that the waste exhibits.

23. EPA's and Arkansas Department of Energy and Environment's Division of Environmental Quality ("AR DEQ") regulations (as relevant to this CAFO) require that "Generators" of "Solid waste" and "Hazardous waste" have an obligation under RCRA to ensure that its secondary material is recycled as allowed under RCRA and/or equally that its waste is disposed in compliance with RCRA.

V. FACTUAL ALLEGATIONS AND ALLEGED VIOLATION

24. National Oilwell Varco L.P. ("NOV") is a limited partnership formed under the laws of the State of Delaware.

25. VSE Corporation ("VSE") is a corporation organized under the laws of the State of Delaware.

26. American Airlines, Inc. ("AA") is a corporation formed under the laws of the State of Delaware.

27. Solar Turbines Incorporated ("Solar") is a corporation formed under the laws of the State of Delaware.

28. Goodrich Corporation ("Goodrich") is a corporation formed under the laws of the State of New York.

29. AAR Landing Gear Corporation ("AAR") is a limited liability company organized under the laws of the State of Florida.

30. AV Task, Inc. ("AV Task") is a corporation organized under the laws of the State of Missouri.

31. Varec Biogas Inc. ("Varec") is a corporation organized under the laws of the State of Delaware.

32. Honeywell International, Inc. ("Honeywell") is a company organized under the laws of the State of Delaware.

33. Kansas Dry Stripping Inc. "(KDS") is an S Corporation organized under the laws of the State of Kansas.

34. Each of the above listed Respondents sent waste to the Facility located at 6500 Grand Avenue, Fort Smith, Arkansas 72904.

35. Each of the Respondents is a "person" within the meaning of Section 1004(15) of RCRA, 42 U.S.C. § 6903(15), APC&EC Rule 23 Section 261.10, [40 C.F.R. § 260.10].

36. The Facility or US Technology ("UST") identified in Paragraph 1 of this CAFO is a "Facility" within the meaning of APC&EC Rule 23 Section 261.10, [40 C.F.R. § 260.10].

37. The Facility is not a permitted treatment storage and disposal ("TSD") facility as is defined by APC&EC Rule 23 Parts 270.1 and 270.1040, [C.F.R. Parts 270.1 and 270.10].

38. During the period of April 16, 2018 to April 19, 2018, EPA, Region 6 conducted a RCRA inspection and record review ("Investigation") of the Facility.

39. During the Investigation, EPA, Region 6 identified and photographed a warehouse at the Facility storing an estimate of 10,000 drums and 1,200 super sacks totaling about 6,854,400 pounds of materials, identified as SBM.

40. From its Investigation, EPA, Region 6 concluded that UST stored the material identified in Paragraph 39 above from at least 2010 through the relevant periods of this CAFO.

41. The material identified in Paragraph 39 above is "Solid Waste" as defined by APC&EC Rule 23 Section 261.10, [40 C.F.R. § 260.10].

42. During the Investigation, EPA, Region 6 collected representative samples of the Solid Waste identified in Paragraph 39 above and the analytical results identified the Solid Waste to be hazardous waste for D006 (Cadmium); D007 (Chromium); and D008 (Lead).

43. The waste streams identified in Paragraph 42 are "Solid Waste" and "Hazardous Waste" as those terms are defined by APC&EC Rule 23 Section 261.10, [40 C.F.R. § 261.24].

44. Respondents are subject to Sections 3002 and 3010 of RCRA, 42 U.S.C. §§ 6922 and 6930, and the regulations set forth at APC&EC Rule 23 Parts 262, 265, and/or 270, [40 C.F.R. Parts 262, 265, and/or 270].

RCRA ALLEGATION

Failure to Ship Hazardous Waste to a Permitted Treatment, Storage, and/or Disposal Facility

45. The allegations in Paragraphs 1-44 are realleged and incorporated herein by reference.

46. Pursuant to APC&EC Rule 23 Section, 262.12(c), [40 C.F.R. § 262.12(c)], a generator must not offer its hazardous waste to a transporter, or to a treatment, storage, and/or disposal facility that has not received an active EPA identification number and the required permit (or interim status) necessary to receive and manage the generator's waste.

47. At all times relevant to this CAFO, UST did not and does not have a permit (or interim status) pursuant to the requirements of APC&EC Rule 23 Sections 270.1 and 270.10, [40 C.F.R. §§ 270.1 and 270.10], that would qualify or allow UST to treat, store, and/or dispose hazardous waste.

48. At all times relevant to this CAFO, UST routinely picked-up SBM identified in Paragraph 42 above from Respondents' facilities and transported, delivered and stored such SBM to/at the Facility.

49. Respondents violated APC&EC Rule 23 Section, 262.12(c), [40 C.F.R. § 262.12(c)], by offering to return SBM to UST which, in turn, routinely picked-up and transported, delivered and stored such SBM to/at the Facility which was not and is not permitted to treat, store, and/or dispose of hazardous waste.

50. From the Investigation, EPA, Region 6 determined that for the relevant period of this CAFO, Respondents failed to comply with APC&EC Rule 23 Section, 262.12(c), [40 C.F.R. § 262.12(c)], and are therefore subject to civil penalties pursuant to Section 3008(a) of RCRA, 42 U.S.C. § 6928(a).

VI. COMPLIANCE ORDER

51. Pursuant to Section 3008(a) of RCRA, 42 U.S.C. § 6928(a) and within forty-five (45) days of the effective date of this CAFO, Respondents agree to initiate and diligently pursue to completion the actions necessary to comply with the applicable RCRA laws and regulations, both State and federal. Further, each Respondent shall certify to EPA in writing that the removal activities that are subject to this CAFO and described more fully in Appendix I ("RCRA Compliance Narrative and Schedules") were fully completed in compliance with all applicable federal and State requirements of RCRA and the implementing regulations.

a. If Respondents cannot meet the timeline listed above and will need to delay performance for less than ninety (90) calendar days, Respondents shall notify EPA and request an extension of time, including a timetable for compliance. EPA will grant an extension of up to ninety (90) calendar days. If Respondents determine that they need longer than the additional ninety (90) calendar days to come into compliance, Respondents will need to initiate a conference call with EPA to discuss the rationale for the delay, before EPA will grant additional extensions.

52. In all instances in which this CAFO requires written submission to EPA, the submittal made by each Respondent shall be signed by an owner or officer or officer's designee of each Respondent and shall include the following certification:

I certify under the penalty of law that this document and all its attachments were prepared by me or under my direct supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, 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.

a) Copies of all documents required by this CAFO may be sent to the following:

U.S. EPA, Region 6
Enforcement and Compliance Assurance Division
RCRA Enforcement Section ("ECDSR")
1201 Elm St., Suite 500
Dallas, TX 75270
Attn: Ms. Angela Hays and Ms. Debra Pandak

53. In the alternative and as set forth in Subsection v of Section VII.v of this CAFO (Notification), documents required by this CAFO may be sent to Ms. Angela Hays and Ms. Debra Pandak via email at Hays.Angela@EPA.gov and Pandak.Debra@EPA.gov.

VII. TERMS OF SETTLEMENT

i. Penalty Provisions

54. Pursuant to the authority granted in Section 3008(g) of RCRA, 42 U.S.C. § 6928(g) and upon consideration of the entire record herein, including the above referenced Factual Allegations and Alleged Violation, which are hereby adopted and made a part hereof, upon the seriousness of the alleged violation, and Respondents' good faith efforts to comply with the applicable regulations, which includes Respondents' cooperation throughout the negotiation and information provided to EPA, Region 6 subsequent to the Investigation, EPA, Region 6 will not assess a civil penalty in this matter as long as Respondents fully complete and comply with the removal activities and within the time period described in this CAFO and Appendix I and in compliance with all applicable State and Federal laws and regulations.

ii. Excusable Delay / Force Majeure

55. Respondents shall perform all the requirements of this Order within the time limits set forth, approved, or established herein, unless such time limit is otherwise modified or a scheduling change has been agreed to by the EPA Project Coordinator in accordance with this Order, or unless the performance is prevented or delayed solely by events which constitute a Force Majeure Event. For purposes of this Order, a Force Majeure Event is defined as any event arising from causes not reasonably foreseeable and beyond the control of the Respondents which could not be overcome by due diligence and which delays or prevents performance by a date required by this Order and includes delays arising out of the COVID-19 pandemic. Such events do not include unanticipated or increased costs of performance, changed economic circumstances, or normal precipitation events.

56. Respondents shall notify in writing the EPA within ten (10) calendar days after becoming aware of any event which is known, or should be known, to have constituted a Force Majeure Event. A single Respondent may provide notice on behalf of one or more Respondents. Such notice shall provide available information on the event causing or anticipated to cause the delay, the estimated length of delay, including necessary demobilization and remobilization, its causes, measures taken or to be taken to minimize the delay, and an estimated timetable for implementation of these measures. The Respondents must adopt all reasonable measures to avoid and minimize the delay. Failure to comply with the notice provision of this section shall constitute a waiver of the Respondents' right to assert a Force Majeure Event has occurred and shall be grounds for EPA to deny an extension of time for performance.

57. After receiving notice that the Respondents are invoking the Force Majeure Event provisions of this Order, EPA shall respond in writing indicating either EPA's agreement that the event constitutes a Force Majeure Event or its disagreement and the reasons, therefore.

58. If EPA and the Respondents agree that a Force Majeure Event has occurred, the time for performance may be extended, upon EPA's approval, for a period equal to the delay resulting from such circumstances or such longer time as EPA determines appropriate. This shall be accomplished through written exchange of letters amongst the parties and a documentation to the file or through modification of the schedule in a previously approved work plan. Such an extension will not alter the schedule for performance or completion of any other tasks required by this Order unless these are also specifically altered.

59. In the event that EPA and the Respondents cannot agree that any delay or failure has been or will be caused by a Force Majeure Event, or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance with the Dispute Resolution provisions contained in this Order.

60. Respondents' timely performance of their obligations hereunder is conditioned upon EPA securing and maintaining uninterrupted or delayed access to the Facility for Respondents and their consultants to perform the work identified in Appendix I. In the event that such access is delayed or denied, the deadlines and milestones for Respondents in Appendix I shall be automatically extended on a day-for-day basis equivalent to each day of delay attributable to the lack of access.

iii. Stipulated Penalties

61. In addition to any other remedies or sanctions available to EPA, Region 6, if the

Respondents fail or refuse to comply with any provision of this CAFO and its Appendix I, the Respondents shall pay their respective percentage (as set forth in Appendix I) of the following stipulated penalties for each day during which each failure or refusal to comply continues:

Period of Failure to Comply	Penalty Per Violation Per Day
1st through 15th day	$ 100.00
16th through 30th day	$ 500.00
31st day and beyond	$ 1,000.00

62. Penalties shall accrue from the date of the noncompliance until the date the violation is corrected, as determined by EPA. The payments shall be made by one of the following methods:

a. By mailing a bank check, cashier's check, or certified check payable to "Treasurer, United States," to the following address:

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Center
P.O. Box 979077
St. Louis, MO 63197-9000

b. By wire transfer to:

Federal Reserve Bank of New York
ABA: 021030004
Account No. 68010727
SWIFT address: FRNYUS33
33 Liberty Street
New York, NY 10045

c. By overnight mail (Express, FedEx, DHL, etc.) to:

U.S. Bank
Government Lockbox 979077
US EPA Fines and Penalties
1005 Convention Plaza
SL-MO-C2-GL
St. Louis, MO 63101
Phone: 314-418-1028

and referencing "In the matter of the US Technology site that is located at 6500 Grand Avenue, Fort Smith, Arkansas 72904" and the "Docket No." that is associated with each Respondent's

respective signature page of this CAFO. The specific docket number pertaining to the remitting Respondent shall be clearly marked on the check or other remittance from such Respondent, to ensure proper credit.

63. The Respondents shall send a simultaneous notice of such payment to the following:

Ms. Lorena S. Vaughn
Regional Hearing Clerk (ORCD)
U.S. EPA, Region 6
1201 Elm St., Suite 500
Dallas, TX 75202-2733
Vaughn.Lorena@epa.gov

Margaret Osbourne, Chief
Waste Enforcement Branch (ECDS)
Enforcement and Compliance Assurance Division
U.S. EPA, Region 6
1201 Elm St., Suite 500
Dallas, TX 75270
Attn: Hays.Angela@EPA.gov and Pandak.Debra@EPA.gov

64. Pursuant to 31 U.S.C. § 3717 and 40 C.F.R. § 13.11, unless otherwise prohibited by law, EPA will assess interest and late payment penalties on outstanding debts owed to the United States and a charge to cover the cost of process and handling a delinquent claim. Interest on any stipulated penalty assessed in this CAFO will begin to accrue on the effective date of the noncompliance and will be assessed at the rate of the United States Treasury tax and loan rate in accordance with 40 C.F.R. § 13.11(a). Moreover, the costs of the Agency's administrative handling overdue debts will be charged and assessed monthly throughout the period the debt is overdue. 40 C.F.R. § 13.11(b). EPA will also assess a fifteen dollar ($15.00) administrative handling charge for administrative costs on unpaid penalties for the thirty (30)-day period after the payment is due and an additional fifteen dollars ($15.00) for each subsequent thirty (30)-day period the penalty remains unpaid. In addition, a penalty charge of up to six percent (6%) per

year will be assessed monthly on any portion of the debt which remains delinquent more than ninety (90) days. 40 C.F.R. § 13.11(b).

65. Should a penalty charge on the debt be required, it shall accrue from the first day payment is delinquent. 31 C.F.R. § 901.9(d). Other penalties for failure to make a payment may also apply.

66. Respondents adherence to the procedures set forth above will ensure proper credit when payments are received in EPA, Region 6.

67. In addition to the stipulated penalties set forth above, EPA specifically reserves the right to seek other remedies or sanctions available to the EPA by reason of the Respondents' failure to comply with the requirements of this CAFO and its Appendix I, including sanctions that EPA may seek under RCRA.

68. If the Respondents dispute the basis for imposition of stipulated penalties, the issue shall be resolved under the Dispute Resolution procedures of this CAFO. All stipulated penalties shall continue to accrue through the period that the dispute resolution is ongoing. Invoking dispute resolution shall not stay the accrual of stipulated penalties; however, the obligation to pay shall be stayed pending resolution of the dispute.

iv. Dispute Resolution

69. If a Respondent objects to any decision or directive of EPA regarding Section VI (Compliance Order) or Subsection VII.iii. (Stipulated Penalties), the Respondent shall notify the following persons in writing of its objections, and the basis for those objections, within thirty (30) calendar days of receipt of EPA's decision or directive:

Margaret Osbourne, Chief
Waste Enforcement Branch (ECDS)
Enforcement and Compliance Assurance Division
U.S. EPA, Region 6

1201 Elm St., Suite 500
Dallas, TX 75270
Attn: Angela Hays and Debra Pandak
Hays.Angela@EPA.gov and Pandak.Debra@EPA.gov.

Chief, RCRA Legal Branch (ORCER)
Office of Regional Counsel
U.S. EPA, Region 6
1201 Elm St., Suite 500
Dallas, TX 75270
Attn: Ms. Marcia E. Moncrieffe
Moncrieffe.Marcia@epa.gov.

70. The Waste Enforcement Branch Chief ("Branch Chief") or his/her designee and the Respondent shall then have an additional fifteen (15) calendar days from EPA's receipt of the Respondent' written objections to attempt to resolve the dispute. If an agreement is reached between the Branch Chief and the Respondent, the agreement shall be reduced to writing and signed by the Branch Chief and the Respondent and incorporated by reference into this CAFO.

71. If no agreement is reached between the Branch Chief and the Respondent within that time, the dispute shall be submitted to the Director of the Enforcement and Compliance Assurance Division ("Division Director") or his/her designee. The Division Director and the Respondent shall then have a second fifteen (15) day period to resolve the dispute. If an agreement is reached between the Division Director and the Respondent, the resolution shall be reduced to writing and signed by the Division Director and Respondent and incorporated by reference into this CAFO. If the Division Director and the Respondent are unable to reach agreement within this second fifteen (15) day period, the Division Director shall provide a written statement of EPA's decision to the Respondent, which shall be binding upon the Respondent and incorporated by reference into the CAFO.

72. If the Dispute Resolution process results in a modification of this CAFO, the modified

CAFO must be approved by the Regional Judicial Officer and filed pursuant to the Subsection on Modification, below.

v. Notification

73. Unless otherwise specified elsewhere in this CAFO, whenever written notice is required to be given, whenever a report or other document is required to be forwarded by one party to another, or whenever a submission or demonstration is required to be made, it shall be directed to the individuals specified below at the email addresses given (in addition to any action specified by law or regulation), unless these individuals or their successors give notice in writing to the other party that another individual has been designated to receive the communication:

EPA:
Margaret Osbourne, Chief
Waste Enforcement Branch (ECDS)
Enforcement and Compliance Assurance Division
U.S. EPA, Region 6
1201 Elm St., Suite 500
Dallas, TX 75270
Attn: Angela Hays and Debra Pandak
Hays.Angela@EPA.gov and Pandak.Debra@EPA.gov.

Respondents:

A. National Oilwell Varco L.P., Jennifer.Moyers@nov.com
B. VSE Corporation, DHPetkoff@vsecorp.com
C. American Airlines, Inc., Vincent.van.Panhuys@aa.com
D. Solar Turbines Incorporated, Durango_Roberto_M@cat.com
E. Goodrich Corporation, Kristen.Sherman@rtx.com
F. AAR Landing Gear Corporation, Jmore@schiffhardin.com
G. AV Task, Inc., Joe.Wilson@avionavtask.com
H. Varec Biogas Inc., John.Gillam@ovivowater.com
I. Honeywell International, Inc., Charles.Anthony@honeywell.com
J. Kansas Dry Stripping Inc., sales@ksdrystripping.com

Arkansas ADEQ:

A. Penny Wilson (501) 682-0868, wilson@adeq.state.ar.us
Compliance Branch Manager
Office of Land Resources

Arkansas Department of Environmental Quality
5301 Northshore Drive
Little Rock, AR 72118

B. Bailey Taylor (501) 682-0639, bailey.taylor@adeq.state.ar.us
Policy & Administration Branch Manager
Office of Land Resources
Arkansas Department of Environmental Quality
5301 Northshore Drive
Little Rock, AR 72118

vi. Modification

74. The terms, conditions, and compliance requirements of this CAFO may not be modified or amended except upon the written agreement of the Parties, and approved by a Regional Judicial Officer, and such modification or amendment being filed with the Regional Hearing Clerk.

vii. Retention of Enforcement Rights

75. Except as specifically provided in this CAFO, EPA does not waive any rights or remedies available to EPA for any other violations by the Respondents of Federal or State laws, regulations, or permitting conditions.

76. Except as specifically provided in this CAFO, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions to protect public health, welfare, or the environment, or prevent, abate or minimize an actual or threatened release of hazardous substances, pollutants, contaminants, hazardous substances on, at or from the Facility that is cause by Respondents. Furthermore, nothing in this CAFO shall be construed to prevent or limit EPA's civil and criminal authorities, or that of other Federal, State, or local agencies or departments to obtain penalties or injunctive relief under other Federal, State, or local laws or regulations.

viii. Indemnification

77. Neither EPA nor the United States Government shall be liable for any injuries or damages to person or property resulting from the acts or omissions of the Respondents, their officers, directors, employees, agents, receivers, trustees, successors, assigns, or contractors in carrying out the activities required by this CAFO, nor shall EPA or the United States Government be held out as a party to any contract entered into by Respondents in carrying out the activities required by this CAFO.

ix. Record Preservation

78. Respondents shall preserve, from the time this CAFO is executed until it is satisfied and terminated pursuant to Paragraphs 80 through 82, all records and documents in its possession or in the possession of its divisions, employees, agents, contractors, or successors which, in any way relate to this CAFO regardless of any document retention policy to the contrary.

x. Cost

79. Each party shall bear its own costs and attorney's fees. Furthermore, Respondents specifically waive their right to seek reimbursement of its costs and attorney's fees under the Equal Access to Justice Act (5 U.S.C. § 504), as amended by the Small Business Regulatory Enforcement Fairness Act (P.L. 04-121), and any regulations promulgated pursuant to those Acts.

xi. Termination and Satisfaction

80. When Respondents believe they have completed the on-Site Work required under the CAFO, Respondents shall provide written notice thereof to EPA (the "Notice of Work Completion"), with a copy to AR DEQ. Within fourteen (14) business days of EPA's receipt of such Notice of Work Completion, a RCRA inspector from EPA and/or AR DEQ ("RCRA

Inspector") shall inspect the on-Site Work to determine whether such Work (other than final reporting and certification) has been completed in accordance with Appendix I. The RCRA Inspector shall, within ten days of inspecting the Site, issue and transmit to EPA and the Respondents a written determination ("Inspector's Determination") which either: (a) states that all on-Site Work has been completed in accordance with Appendix I, or (b) specifically identifies any deficiencies in the on-Site Work and the action(s) required (consistent with the Work Plan) to address such deficiencies. If the Inspector's Determination identifies deficiencies in the on-Site Work, Respondents shall promptly correct such deficiencies and provide written notice of completion thereof ("Notice of Correction") to EPA, with a copy to AR DEQ. Upon receiving Respondents' Notice of Correction, the RCRA Inspector will repeat inspection of the Work in accordance with the foregoing procedure and timeframes. The Work inspection process shall be repeated until such time as the RCRA Inspector issues an Inspector's Determination stating that all on-Site Work has been completed in accordance with Appendix I.

81. When Respondents believe that they have complied with all the requirements of this CAFO, including compliance with Section VI (Compliance Order) and payment of any stipulated penalties that may be assessed, each Respondent shall so certify in writing and in accordance with the certification language set forth in Section VI (Compliance Order), Paragraph 52 of this CAFO. Unless the EPA objects in writing within sixty (60) days of EPA's receipt of each Respondent's certification, then this CAFO is terminated as to each such Respondent based on EPA's receipt of such Respondent's certification, and EPA shall thereafter, within fourteen (14) business days of a written request by Respondent, provide written confirmation to such Respondent that the CAFO is terminated.

82. This CAFO resolves only the claim alleged in this CAFO relative to the SBM which was picked up and/or transported by UST from Respondents' facilities and which was delivered by UST to, or otherwise became located at or emanated from, the Facility and any Federal civil penalties for the violation alleged in this CAFO that relates to the Facility as provided in 40 C.F.R. § 22.18(c) upon the termination of this CAFO.

83. Except for any disposal/release caused by Respondents during the removal process described in this CAFO and its Appendix ("RCRA Compliance Narrative and Schedule"), upon completion of the Work, Respondents have no further responsibilities to remove and/or to remediate hazardous waste and/or substances that were released, generated, stored and/or may have emanated from hazardous waste and/or substances generated and/or stored at the Facility, and Respondents are released from any and all civil liability relating to the performance of Appendix I ("RCRA Compliance Narrative and Schedules"), Section VI (Compliance Order), and Paragraph 51 of this CAFO. Instead, EPA will look to the United States Department of Defense to remove the SBM remaining at the Site after completion of the Work (4000 drums) and perform the final cleanup of the warehouse, and will look to the owner and operator of the Facility, Mr. Williams and any subsequent owner or operator, to address any other such releases and/or disposal upon the termination of this CAFO and its Appendix.

84. Respondents understand that the EPA anticipates that the United States Department of Defense or one or more divisions, branches, units or installations thereof (collectively "DOD") will enter into an agreed order or other form of agreement with EPA, whereby DOD will remove the approximately 4000 drums of SBM that will remain at the Facility after completion of the Work by Respondents pursuant to this CAFO. If and to the extent DOD provides a reciprocal release and covenant not to sue (at least as extensive as Respondents' reciprocal release of DOD

contained in subsections (a) and (b) herein) in DOD's agreed order or other form of agreement with EPA for removal of SBM from the Facility, then, upon completion of DOD's removal obligations in a matter satisfactory to EPA, Respondents hereby: (a) release DOD from any and all actual or potential claims, complaints, liabilities, obligations, promises, actions, causes of action, damages, costs, debts, and expenses of any kind, whether known or unknown, that Respondents have ever had, now have or may have, against DOD for the consolidation, removal, transportation, treatment and disposal of the SBM stored in the warehouse at the Facility (the "Released Claims"), and (b) covenant not to sue DOD for any Released Claims. Respondents' release of and covenant not to sue DOD set forth above is contingent upon DOD providing Respondents with a reciprocal release and covenant not to sue that is at least as extensive as that given by Respondents herein, and shall be of no force and effect if such release and covenant not to sue is not so provided by DOD.

85. For purposes of the identification requirement in Section 162(f)(2)(A)(ii) of the Internal Revenue Code, 26 U.S.C. § 162(f)(2)(A)(ii), and 26 C.F.R. § 162-21(b)(2), performance of Appendix I ("RCRA Compliance Narrative and Schedules"), Section VI (Compliance Order), and Paragraph 51 of this CAFO is restitution, remediation, or required to come into compliance with the law.

xii. Effective Date of Settlement

86. This CAFO, and any subsequent modifications, become effective upon filing with the Regional Hearing Clerk.

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: National Oilwell Varco L.P., RCRA-06-2021-0931

By: _____
(Signature)

Printed Name: Kenneth A. Jeck

As its: Vice President - Risk Management
(Title)

Date: 7/21/2021

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: VSE Corporation, RCRA-06-2021-0932

By: _____
(Signature)

Printed Name: Stephen Griffin

As its: CFO
(Title)

Date: 7/15/21

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: American Airlines, Inc, RCRA-06-2021-0933

By: Vincent van Panhuys Digitally signed by Vincent van Panhuys Date: 2021.07.17 08:51:36 -05'00'
(Signature)

Printed Name: American Airlines
Vincent C. van Panhuys
Director, Senior Attorney – Ethics & Compliance
Fort Worth, Texas
+1 (817) 239-9972 Mobile
Vincent.van.Panhuys@aa.com

As its: _____

Date: July 17, 2021

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: Solar Turbines, Corporation RCRA-06-2021- 0934

By: _____
(Signature)

Printed Name: ADAM NAMMACI

As its: GENERAL MANAGER
(Title)

Date: 07/15/2021

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: Goodrich Corporation, RCRA-06-2021-0935

By: _____
(Signature)

Printed Name: Edward F. McHugh

As its: VP & Counsel
(Title)

Date: 7/15/21

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: AAR Landing Gear Corporation, RCRA-06-2021-0936

By: _____
(Signature)

Printed Name: Joshua R. More

As its: Counsel for AAR
(Title)

Date: 7/21/21

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: AV Task, Inc., RCRA-06-2021-0937

By: Joe Wilson Digitally signed by Joe Wilson Date: 2021.07.14 13:38:12 -05'00' _____

(Signature)

Printed Name: Joe Wilson

As its: President

Date: 07/14/2021

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: Varec BioGas, Inc., RCRA-06-2021-0938

By: Jim Groman Digitally signed by Jim Groman Date: 2021.07.16 09:38:22 -07'00' _____
(Signature)

Printed Name: Jim Groman

As its: VP of Sales and Marketing
(Title)

Date: 7/16/21

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: Honeywell International, Inc., RCRA-06-2021-0939

By: Gregory A. Boff
(Signature)

Printed Name: GREGORY A. BOFF

As its: VP HSE&F HON. AEROSPACE
(Title)

Date: 7/19/21

UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER:

FOR THE RESPONDENT: Kansas Dry Stripping, Inc., RCRA-06-2021-0940

By: _____
(Signature)

Printed Name: Terry Scroggin

As its: President
(Title)

Date: July 15, 2021

THE UNDERSIGNED PARTIES CONSENT TO THE ENTRY OF THIS CONSENT AGREEMENT AND FINAL ORDER (con't):

FOR THE COMPLAINANT:

Cheryl T. Seager

Digitally signed by CHERYL SEAGER
DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=CHERYL SEAGER, 0.9.2342.19200300.100.1.1=68001003651793
Date: 2021.07.22 10:29:58 -05'00'

Cheryl T. Seager
Director
Enforcement and
Compliance Assurance Division
U.S. EPA, Region 6

FINAL ORDER

Pursuant to the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties, 40 C.F.R. Part 22, the foregoing CAFO is hereby ratified. This Final Order shall not in any case affect the right of EPA or the United States to pursue appropriate injunctive or other equitable relief or criminal sanctions for any violations of law. This Final Order shall resolve only those causes of action alleged herein relative to the SBM which was picked up and/or transported by UST from Respondents' facilities and which was delivered by UST to, or otherwise became located at or emanated from, the Facility. Nothing in this Final Order shall be construed to waive, extinguish or otherwise affect Respondents' (or their officers, agents, servants, employees, successors, or assigns) obligation to comply with all applicable federal, state, and local statutes and regulations, including the regulations that were the subject of this action. The Respondents are ordered to comply with the terms of settlement and the civil penalty payment instructions as set forth in the CAFO. Pursuant to 40 C.F.R. § 22.31(b) this Final Order shall become effective upon filing with the Regional Hearing Clerk.

THOMAS RUCKI

Digitally signed by THOMAS RUCKI
DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=THOMAS RUCKI, 0.9.2342.19200300.100.1.1=68001003655804
Date: 2021.07.26 14:30:04 -05'00'

Regional Judicial Officer
Thomas Rucki

CERTIFICATE OF SERVICE

I hereby certify that on the day and year seen below, the original of the foregoing Consent Agreement and Final Order ("CAFO") was emailed to the Regional Hearing Clerk, U.S. EPA, Region 6, 1201 Elm St., Suite 500, Dallas, Texas 75270. Also, a true and correct copy of the RCRA CAFO, Docket Nos. RCRA-06-2021-0931 through 0940 was transmitted via email to Respondents or counsel for Respondents as follows:

A. National Oilwell Varco L.P., Jennifer.Moyers@nov.com
B. VSE Corporation, DHPetkoff@vsecorp.com
C. American Airlines, Inc., Vincent.van.Panhuys@aa.com
D. Solar Turbines Incorporated, Durango_Roberto_M@cat.com
E. Goodrich Corporation, Kristen.Sherman@rtx.com
F. AAR Landing Gear Corporation, Jmore@schiffhardin.com
G. AV Task, Inc., Joe.Wilson@avionavtask.com
H. Varec Biogas Inc., John.Gillam@ovivowater.com
I. Honeywell International, Inc., Charles.Anthony@honeywell.com
J. Kansas Dry Stripping Inc., sales@ksdrystripping.com

MARCIA MONCRIEFFE

Name and Date: Marcia E. Moncrieffe
Counsel for EPA
Office of Regional Counsel
U.S. EPA, Region 6
1201 Elm St., Suite 500
Dallas, TX 75270
Moncrieffe.Marcia@EPA.gov.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6
DALLAS, TX

IN THE MATTER OF:	§	
	§	Consent Agreement and Final Order
	§	USEPA Docket No. RCRA-06-2021-0931 thru 0940
	§	
RESPONDENTS	§	
	§	

APPENDIX I

RCRA COMPLIANCE PROJECT NARRATIVE

AND SCHEDULES

(Removal of Hazardous Waste Pursuant to RCRA Subtitle C and its implementing Regulations from the US Technology Fort Smith, Arkansas Site)

PARTIES:

This Appendix I to the Consent Agreement and Final Order ("CAFO") is entered by the United States Environmental Protection Agency ("EPA" or "Complainant"), Region 6, and the following companies:

A. National Oilwell Varco L.P.
B. VSE Corporation
C. American Airlines, Inc.
D. Solar Turbines Incorporated
E. Goodrich Corporation
F. AAR Landing Gear Corporation
G. AvTask Inc.
H. Varec Biogas Inc.
I. Honeywell International, Inc.
J. Kansas Dry Stripping Inc.

(collectively "Respondents" and individually a "Respondent") and concerns the US Technology Corporation site that is located at 6500 Grand Avenue, Fort Smith, Arkansas 72904 (the "Facility" or "Site").

PURPOSE:

The mutual objectives of the United States Environmental Protection Agency, Region 6 ("EPA, R6") and Respondents in entering into the Consent Agreement and Final Order ("CAFO") are to: (1) execute this Appendix I and its Attachments A ("Work Plan") that are incorporated by reference into the CAFO and to properly remove, transport, and dispose of hazardous spent blast media ("SBM" or "waste") currently stored at the US Technology facility located in Fort Smith, Arkansas ("Facility" or "Site"); (2) to eliminate any potential threat of a release of the hazardous waste or hazardous constituents to the environment that may arise from Respondents' removal, transportation, and off-Site disposal of SBM from or at the Facility; and (3) to mitigate and/or remediate any releases of hazardous waste or hazardous constituents at or from the Facility that may occur during the execution of the work described in the CAFO (the "Compliance Project").

SITE DESCRIPTION:

US Technology is located at 6500 Grand Avenue, Fort Smith, Arkansas 72904. The property consists of a 30,000 square foot warehouse. It has been estimated that 10,000 drums and 1,200 supersacks of SBM are stored in the warehouse. EPA, R6 reviewed the waste tickets, which show the weights of the drums and sacks and with these numbers multiplied respectively with the number of drums and sacks arriving at a total of 6,854,400 lbs of waste on Site. Respondents will remove all of the supersacks and approximately 6000 drums of SBM from the warehouse. Respondents' Work will be considered complete when 4000 drums of SBM remain in the warehouse. EPA will look to the United States Department of Defense ("DOD") to remove the remaining 4000 drums of SBM at the Facility.

WASTE PROFILE:

EPA, R6 analytical results and Respondents' knowledge of process(es) narratives were used to determine the profile for SBM stored in the warehouse.

<u>EPA, R6 Analytical Data on SBM:</u>

1. Supported by EPA, R6's analytical, (See Appendix A to attached Work Plan), the waste to be removed is hazardous waste with the toxicity characteristic for cadmium, chromium, and lead having, respectively, the corresponding waste code D006, D007, and D008. The hazardous waste streams identified herein are "hazardous waste" as defined in Arkansas Pollution Control and Ecology Commission Rule 23 ("APC&EC Rule 23") Section 261.24 and 40 Code of Federal Regulations ("C.F.R.") § 261.24.

<u>Respondent Material Profile via Process Knowledge</u>:

2. Supported by Safety Data Sheets ("SDSs") and a description of the different processes (provided by several Respondents) for which the blast media was used, EPA, R6 has determined that the SDSs further confirm that the SBM on Site is hazardous waste with the toxicity characteristic for cadmium, chromium, and lead having, respectively, the corresponding waste code D006, D007, and D008.

Summation:

Based on EPA, R6's analytical results and information gathered from several Respondents, SBM stored at the Facility has been determined by EPA, R6 to be characteristically hazardous waste for cadmium, chromium, lead.

RESPONDENT REMOVAL WORK PLAN

The Work Plan included as Attachment A addresses at a minimum the following requirements:

1. A detailed description of activities associated with the removal, transportation and disposal of all hazardous waste that Respondents have agreed to remove from the Facility's warehouse. Respondent's Work Plan has provided for the proper disposal of SBM hazardous waste from the referenced Facility, to meet the applicable Land Disposal Restriction requirements for characteristic wastes as set forth at 40 C.F.R. Part 268 and all applicable federal, State, and local hazardous waste laws and regulations;
2. Identifies Respondents' Removal Coordinator who will oversee and direct the onsite removal activities, contractors, and/or subcontractors, their roles in the removal and disposal activities and qualifications;
3. Includes procedures and controls for ensuring proper containment of wastes during sorting, staging, removal, and other relevant and appropriate activities necessary for the completion of this Compliance Project;
4. Includes procedures to address spills of waste that may occur during the removal activities. (This may include additional removal activities such as sampling to determine extent of contamination, or excavation of soil materials etc., caused by the spills);
5. Identifies a RCRA permitted disposal facility and transportation company, and other services needed to complete the removal, transportation, and disposal activities. Respondents have taken due diligence to ensure that the disposal facility and the transporters shall meet RCRA requirements and be in good standing;
6. A diagram of the Facility showing the warehouse building in relation to the staging area(s) and loading area(s);
7. A schedule for implementation of all activities;
8. Includes procedures for notifying EPA if waste other than hazardous SBM is identified during the removal; and
9. A schedule of interim reports and a Removal Completion Report. (The reports are expected to address overall progress to include volume of waste removed, results of any monitoring, discussion of problems encountered and resolutions, identification of unresolved issues and potential impacts to removal, and projected activities for next reporting period).

MINIMUM QUALIFICATIONS FOR RESPONDENTS' PERSONNEL

All Work[1] performed by the Respondents shall be incorporated by reference into the CAFO and shall be under the direction and supervision of an individual who has demonstrated expertise in hazardous waste removal and cleanup. Respondents have submitted in Attachment A to this Appendix I to EPA the name(s), title(s), and qualifications of the Respondents' personnel, and of any contractors or subcontractors, to be used in carrying out the Work required by this RCRA Compliance Project for purposes of the CAFO. Respondents have purported and certified to EPA that its contractor or consultant has the technical expertise and training, including OSHA 1910.120 or other related safety training, to adequately perform all aspects of the work for which it is responsible. Additionally, Respondents have a continuing duty to ensure that when a license is required, only licensed individuals shall be used to perform any Work required by the CAFO.

HEALTH AND SAFETY PLAN

Respondents have developed and assured EPA that its Health and Safety Plan ("HASP") ensures the safety of the individuals working on the removal and disposal activities. The HASP is consistent with applicable Occupational Safety and Health Administration regulations under 29 C.F.R. §§ 1910 and 1926. Respondents have submitted to EPA a HASP that describes all activities to be performed to protect onsite personnel from physical, chemical, and all other hazards posed by the removal activities. The HASP is meant to cover all Work and must be updated, as appropriate, if conditions or activities change during the removal and disposal activities. The HASP was not reviewed for approval by EPA.

ACCESS

Respondents will coordinate with the EPA to gain access under the Access Agreement signed by the Property owner on 02/14/2019. EPA will coordinate with the Arkansas Department of Environmental Quality ("AR DEQ"), to have a RCRA AR DEQ or EPA inspector available, to allow Respondent and its contractor/subcontractors access to the property during removal activities.

During the removal activities, Respondents must maintain site security to minimize the possibility for the unauthorized entry of persons onto the property. This security must include, but is not limited to, closure of doors and gates or other entrances to the site (e.g., locked entrance, or controlled roadway access). Please note, at all times during Respondents' onsite removal activities from the referenced site, Respondents must coordinate with the RCRA AR DEQ or EPA Inspector.

[1] Work for purposes of this project shall mean all activities necessary to remove, transport, and dispose of the agreed upon quantity of hazardous waste from the referenced site to be taken to a licensed Treatment, Storage and Disposal Facility pursuant to RCRA and its implementing regulations.

RESPONDENTS REMOVAL COORDINATOR

Respondents have designated a Removal Coordinator responsible for overseeing the Respondent's removal activities.

Name: David W. Smith
Organization: American Airlines
Phone number: 918-230-2331
E-mail: Dave.W.Smith@aa.com

To the greatest extent possible, Respondents' Removal Coordinator shall be readily available during all work to be performed. Respondents' Removal Coordinator shall have the authority to act on behalf of Respondents to implement the Removal Work Plan, Attachment A.

REMOVAL COMPLETION REPORT

A Removal Completion Report shall be submitted to EPA for review 45 days after removal activities are complete. The Removal Completion Report should address:

- Pre and post conditions of the warehouse;
- Removal activities conducted and any changes in approach necessary to complete the removal, transportation, and disposal of the hazardous waste;
- Quantities, in pounds, of hazardous waste transported and disposed;
- Destination disposal facility used for disposal; if, more than one disposal facility is used please state the name of each and quantities shipped to each;
- A summary of any media monitoring conducted during the removal activities, and any actions required;
- Statement of actual costs incurred to comply with the RCRA Compliance Project;
- Photographs documenting major stages of removal activities; and
- Appendices containing all relevant documentation generated during the RCRA Compliance Project (e.g., manifests, bills of lading, analytical data, monitoring data etc.,)

ATTACHMENT A

WORK PLAN

REMOVAL ACTION WORK PLAN

US TECHNOLOGY WAREHOUSE
FT. SMITH AR

US ENVIRONMENTAL PROTECTION AGENCY REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TX 75270

JUNE 2021

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 TELECOM DRIVE, SUITE 400
INDIANAPOLIS, INDIANA 46278

TABLE OF CONTENTS

LIST OF ATTACHMENTS

LIST OF FIGURES

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1 INTRODUCTION

This Removal Action Work Plan ("RAWP") has been prepared for a hazardous waste removal action ("Removal Action") at property owned by US Technology Corporation ("UST") and located at 6500 Grand Avenue, Fort Smith, Arkansas 72904 ("Site"). The Removal Action will be conducted to remove metal-impacted spent blasting media ("SBM") contained in drums and super-sacks presently stored in a warehouse at the Site. The SBM will be consolidated on-site, transported and stabilized for appropriate off-site disposal as characteristically hazardous waste.

The Removal Action is being performed pursuant to a Consent Agreement and Final Order ("CAFO") entered into by the United States Environmental Protection Agency ("USEPA") and the following companies (which companies are collectively referred to herein as "Respondents"):

A. American Airlines, Inc.
B. National Oilwell Varco
C. VSE Corporation
D. Solar Turbines
E. Goodrich Corporation
F. AAR Landing Gear Corporation
G. AvTask Inc.
H. Varec Biogas Inc.
I. Honeywell International, Inc.
J. Kansas Dry Stripping Inc.

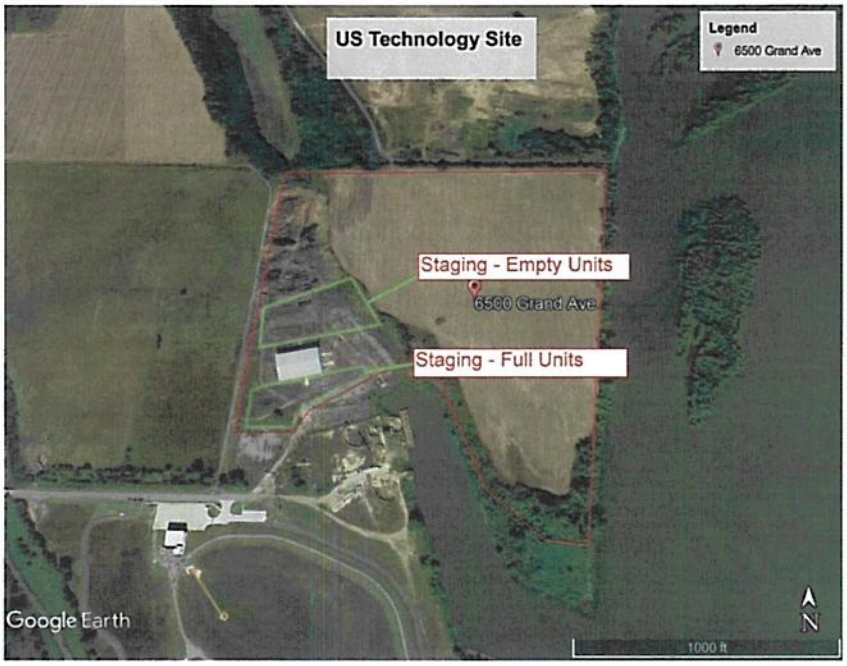
1.1 Site Description

The Site is located in Sebastian County Arkansas on the east side of Fort Smith and lies between Interstate 540 and the western bank of the Arkansas River. The Site occupies approximately 68-acres and is immediately surrounded by relatively flat, undeveloped land. There is a single large warehouse at the Site (163' x 206'; approximately 33,578 sq. ft.) in which the containers of SBM are currently stored. The warehouse has two truck loading docks on the east side of the building, one on the south and one on the north. There is a ramp serving the loading dock on the north side of the warehouse which will be the area in which the SBM will be consolidated into dump trailers for transport to an off-site treatment facility. Staging areas for empty transportation containers will generally be on the north side of the building for empty units and the south side of the building for full units (See Figure 1 and Figure 2).

Approximately 10,000 drums and 1200 supersacks of SBM are stored in the warehouse. Based on USEPA's review of waste tickets (which show the weights of the drums and sacks), the USEPA has estimated approximately 6.8 million pounds (~3,400 tons) of SBM is present on Site. All of the supersacks and approximately 6000 drums of SBM will be removed from the warehouse. Work will be considered complete when 4000 drums of SBM remain in the warehouse. EPA will look to the Department of Defense ("DOD") to remove the remaining 4000 drums of SBM at the Facility.

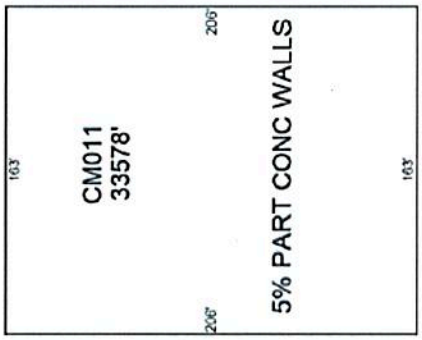
HERITAGE ENVIRONMENTAL SERVICES

Figure 1
US Technologies Warehouse
6500 Grand Ave. – Ft. Smith, AR
(USGS 7.5-minute quad, Van Buren AR)



Google Earth Image with property shown

Front Entrance



Building Layout

UST Marine Property, LLC Parcel 18883-0000-00374-00 - ARCountyData.com

Figure 2
US Technologies Warehouse
Various Views
6500 Grand Ave. – Ft. Smith AR
(Approximately 68 acres total property)

1.2 Background and Waste Characterization

The Site was used by UST for the storage of SBM destined for recycling at other UST facilities. As such, the SBM was handled and shipped to the Site as a RCRA exempt recyclable material. However, because the material was never actually recycled by UST, USEPA now considers the SBM to be a characteristically hazardous waste and has requested that the respective generators remove and properly dispose of the material in accordance with state and federal laws.

USEPA's analytical results (Attachment A) and Respondents' "knowledge of process" narratives were used by USEPA to determine the profile for the SBM stored in the warehouse. The analytical results indicate the waste to be removed should be classified as a characteristically hazardous waste, which displays the toxicity characteristic for cadmium, chromium, and lead having, respectively the corresponding waste codes: D006, D007, and D008.

Based on Safety Data Sheets ("SDSs") and descriptions of the different processes provided by the Respondents which used the SBM, USEPA further confirmed that the material is hazardous waste with the toxicity characteristic for cadmium, chromium, and lead having, respectively, the corresponding waste code D006, D007, and D008.

Based on the above two (2) lines of evidence, USEPA has determined that the waste is adequately characterized and that no additional waste analysis is required for disposal characterization, with the exception that the material must meet appropriate land disposal criteria.

2 SITE PREPARATION FOR FIELD WORK

Various tasks will be performed prior to mobilization to the site. These tasks are discussed in the following Sections and include:

- Preparation of a Health and Safety Plan
- Utility Clearance
- Waste Profiling
- Logistics/Transportation Plan

2.1 Health and Safety Plan

A site-specific *Health and Safety Plan* (HASP) has been prepared to establish general site operating procedures, safety guidelines and contingency plans for all proposed work to be performed on the Site. A copy of the DRAFT - HASP is included as Attachment B of this Work Plan. The HASP is dynamic in nature and may be revised as Site conditions change. The HASP and any subsequent addenda will apply to all personnel who are involved with removal activities at the Site. All work will be conducted in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, including 29 Code of Federal Regulations (CFR) 1910 (General Industry Standards) and any specific procedures or protocols deemed by Heritage Environmental Services, LLC ("Heritage") to be needed for the Removal Action.

All personnel who will be directly involved in the removal activities will have received the appropriate hazardous waste site worker training. In addition, all personnel will be trained in general and Site-specific health and safety procedures. Employees of Heritage and any subcontractors will have completed appropriate safety orientation/training courses prior to coming onto the Site.

2.2 Utility Clearance

Although no excavation is expected to occur at the site, Heritage will contact the Arkansas 811 hotline and request the location and marking of all utilities for which 811 is responsible.

2.3 Hazardous Waste Profile

The SBM will be stabilized and disposed at Elemental Environmental Solutions LLC (EES) (ARD006354161) located at 500 East Reynolds Road, Arkadelphia, AR 71923. Hazardous waste profiling will be completed prior to commencement of removal activities.

2.4 Site Preparation

Prior to beginning removal activities, work zones and staging areas for vehicles and equipment will be identified, discussed with on-site personnel, and transportation vehicles. Exact locations will be identified in the field and anticipated staging areas are shown on Figure 2 (empty roll-offs to the north of the warehouse and full roll-offs to the south). Vehicles and other equipment will remain staged within the property footprint.

A work zone will be established inside the warehouse. Initially, a number of supersacks will be moved or removed to create this area. This work area will expand as supersacks are removed. A decontamination area for equipment will also be established inside the warehouse. Street sweeping will be made available if any "track out" at paved roads is identified. Although all SBM will be containerized inside, rains could cause the appearance of "track out" because site roads are not paved.

Appropriate traffic patterns for field personal and transportation vehicles will also be identified and communicated to drivers prior to beginning removal efforts. Any field equipment to be used will be inspected to assure that it is clean upon arrival at the Site.

A Transportation Management Plan is included as Attachment C of this RAWP.

3 REMOVAL PLAN

The following sections outline the removal actions to be performed in management of the SBM.

3.1 Removal Coordinator/Contractor

The removal coordinator who will oversee and direct the onsite activities shall be Mr. Dave Smith, Sr. Environmental Engineer at American Airlines. Mr. Smith can be reached by phone at 918-292-2835 or email at dave.w.smith@aa.com. Mr. Smith's qualifications are set forth in Attachment D.

The Contractor for the project will be Heritage. Heritage will be responsible for conducting all on-site activities for the removal of the SBM. Chad Dodson, Field Service Manager for Heritage, will manage and direct onsite activities. Mr. Dodson can be reached by phone at (918) 627-2671 or email at chad.dodson@heritage-enviro.com. Mr. Dodson's qualifications are set forth in Attachment D. All Heritage personnel directly involved with the Site will, at a minimum, have completed the following training:

- 40 Hour HAZWOPER - 29 CFR 1910.120
- RCRA - 40 CFR 262.34 incorporating 40 CFR 265.16
- DOT Training - 49 CFR 172.700

Attachment D provides training certificates and qualifications as well as a table showing each individual's experience and role related to this project.

3.2 Schedule

The field work is expected to follow the anticipated schedule as shown on Table 1.

Table 1
Anticipated Schedule

Event	Estimated Duration	Estimated Start	Completion
Mobilization for Work to Begin at Site	5 days	June 28, 2021	July 2, 2021
Removal and Disposal of SBM	40 days	July 6, 2021	August 15, 2021
Final Site Cleanup and Demobilization	3 days		August 18, 2021
Final Report to Respondents for Review	30 days		September 17, 2021
Final reporting	15 days		October 4, 2021

The schedule is dependent upon adequate and timely access to the Site and is subject to weather conditions, governmental restrictions and/or limitations imposed by COVID related issues, and/or road construction delays or work scope deviations that may arise.

3.3 SBM Handling

Heritage will first establish a Loading Area inside the warehouse by first removing or relocating supersacks, which occupy a large portion of the building footprint. Equipment operators and field technicians will use fork-lifts to load the supersacks into end-dump trailers. After removal of the supersacks, fork-lifts will be used to remove the drums/pallets containing the SBM. Drums and supersacks will be visually inspected prior to movement to ascertain structural integrity and/or signs of leakage. Any signs of a potentially unstable container will be noted and the container marked for further evaluation/containment/or alternate handling.

Supersacks will be placed directly into the lined, end-dump trailers. Drums will be carefully staged adjacent to the transportation trailers on poly-materials. The drums lids will be removed and a fork-lift with a drum tilter will be used to transfer the SBM into the trailer; drum contents will be handled separately from supersack materials. If the contents of drums and supersacks appear identical, they may be combined, if approved by the on-site EPA representative, but such combination is not anticipated due to the fact that the supersacks will be removed before the drums. Water spray-down may be used for dust control in combination with other means to limit dust, including the use of poly-constructed "walls", if deemed needed to segregate or ventilate an area. Water will be obtained from the Ft. Smith public water supply via a metered, hydrant located near the Site along Grand Avenue. Water will be contained in a small tanker ("water truck") or portable polyethylene tanks. Activities that could generate dust will take place inside the warehouse, and will be conducted accordance with the Site Health and Safety Plan (Attachment B) to protect worker health. In the event that residual SBM may be spilled during any loading/transfer, the SBM will be contained by the concrete floor of the warehouse and will be swept up and combined into a load out container. Once a transportation container is determined to be at maximum allowable weight, it will be covered with tarps and placed in the staging area for removal from the Site. Staging areas for empty transportation containers will generally be on the north side of the building and the south side of the building for full units (Figure 2).

After placement of drummed SBM into the transportation container, each empty drum will be inspected to ensure that it is "RCRA Empty" (40 CFR 261.7) and then crushed and along with the lid, will be placed in a roll-off for off-site management (steel drums) or disposal as a non-hazardous waste. Preliminary analysis of recycling of steel drums indicates that recycling will not be cost effective. Recycling will be further evaluated as the project proceeds and will consider loss of efficiency, schedule impacts and other operational factors.

A waste manifest will be prepared for each dump trailer containing SBM, which will be appropriately labeled and placarded. Each load will be transported to Elemental Environmental Solutions LLC (EES) (ARD006354161) located at 500 East Reynolds Road, Arkadelphia, AR 71923 for stabilization to

meet Land Disposal Restrictions ("LDR") criteria as set forth at 40 CFR Part 268 (see below), prior to disposal.

Because transfer of SBM to transportation containers will occur within the warehouse, no (outdoor) fugitive SBM dust is anticipated. Transportation of the SBM will be provided by licensed transportation vendors (Heritage IND058484114; Arkansas Permit H-0863).

At the conclusion of the project, 4000 drums will be left in the warehouse. EPA will look to the United States Department of Defense to remove the remaining 4000 drums of SBM at the Facility. The concrete warehouse floors will be swept and rendered "broom clean". Any releases of SBM will be managed as noted in Section 3.7.

The site characteristic waste streams bearing the USEPA codes, and any identified underlying constituents, will require stabilization to meet the following LDR standards. These standards will be achieved within EES's Subpart DD containment buildings. The materials will be placed and mixed with cementitious reagents to meet LDR and land disposed at the EPA Permitted Elemental Environmental Solutions landfill.

Table 2
Site Waste Codes and LDR Criteria

Site Waste Codes Universal Treatment Standards (UTS)		
Waste Code, Constituent	**Toxicity Criteria (TCLP)**	**UTS Criteria (TCLP)**
D006-Cadmium	1 mg/l	0.11 mg/l
D007-Chromium (total)	5 mg/l	0.6 mg/l
D008-Lead	5 mg/l	0.75 mg/l

* No Underlying hazardous constituents were identified by the USEPA.

3.4 Discovery of Non-SBM Material

As the waste is being consolidated, Heritage personnel will visually observe the material in each drum to ensure it is consistent in appearance to SBM waste. To the extent a drum or supersack of material does not appear to be SBM, the container of SBM will be closed, marked with a label showing the date and the phrase "For Further Evaluation" and placed in a designated area in the on-site warehouse for further inspection. The EPA site representative will be notified no later than the end of each workday, or via other arrangements, regarding the existence and number of such containers discovered that day. Heritage will work with the EPA and Respondents on determining the appropriate sampling and handling of any suspected non-SBM materials.

3.5 Decontamination

Equipment utilized for removal activities, which will include two (2) forklifts and a roll-off transportation truck, will be stored overnight in the on-site warehouse. Any end-dump trailers or roll-offs

that are partially filled will be covered with tarps and secured at the end of each work day and stored in the warehouse. Each day, logistics of transportation and work will be coordinated so that adequate space is available for storage of vehicles and roll-offs. At the end of the field work, all equipment that has been in contact with waste materials will be decontaminated prior to leaving the Site. Decontamination will consist of removal of visible solid materials using dry methods (wiping, brushing or use of shovels/tools) and wet methods including hand washing or, as needed, pressure washing for any adhered SBM material.

Decontamination water from wet wash methods, which is expected to be minimal, will be collected and combined in the last truck-load of SBM going off-site for treatment and disposal, and an acceptable sorbent will be added, if necessary, to preclude any paint filter test excursion. No containerized liquids will be separately shipped off-site as waste

Street sweeping shall be made available to keep streets and curbs clean at the Site exit and, to the extent necessary, along Grand Avenue.

A truck route has been prepared and will be adhered to by the drivers to minimize travel on the side roads near the community. At this Site, there is only one ingress/egress route because the Site is situated at the end of a dead-end street. More information is provided in the Transportation Management Plan included as Attachment C.

3.6 Site Security

The Site is presently secure and waste materials are secured within the locked warehouse building. A fence and lockable gate secure the entrance to the Site; there is only one road (Grand Avenue) that enters the Site. Access to the Site will be restricted to project personnel and other authorized personnel, as necessary. Heritage understands that "No Trespassing" Signs have been previously placed at that Site.

In the event of evidence of malicious trespass to the Site during operations of the RAWP, local police will be contacted and the need for site checks by a private security service will be evaluated by the Heritage.

3.7 Spill Control and Response

The handling and transport of waste will, at all times, be conducted in a controlled and safe manner which will minimize damage to the containers and prevent release of the contents. Vehicles and transport containers provided for the handling of bulked SBM will be in a good condition and will be operated by trained staff in a safe manner to prevent spills during handling. Haulage and transportation units will be checked to ensure that their loads are secured and tarped. If any spillage of SBM should occur, it will be promptly swept and/or shoveled, placed into a 55-gallon drum or other suitable container(s) and consolidated into the next loaded end dump trailer. Any spill will be cleaned up with labor, tools, and as needed appropriate equipment (including a HEPA vacuum) suitable for the size of the spill. Heritage will be conducting activities inside the warehouse on a concrete floor, making a spill response easier to address than if loading were to occur out of the warehouse. In the unlikely event SBM

is spilled outdoors, such SBM, and any contaminated soil, would be shoveled into an appropriate container and combined with the next outbound SBM shipment. EPA will be immediately notified of any spillage which takes place outside of the warehouse.

3.8 Soil Erosion and Sediment Control

All SBM consolidation operations will be carried out inside the warehouse. It is not anticipated that any outdoor exposure to SBM will occur. During site preparation, if needed, filter fabric fences, berms or other suitable containment will be placed around features where stormwater runoff is of concern. A considerable distance is present between the warehouse and the property line or possible exposure point; no exposure of SBM to stormwater runoff is anticipated.

3.9 General Housekeeping

Daily accumulations of non-hazardous solid waste material such as discarded safety equipment, debris and rubbish will be collected in garbage bags and disposed of in accordance with State regulations. The Site will not be allowed to become littered with general non-hazardous refuse or waste materials but will be maintained in a neat and orderly condition throughout the duration of the project.

3.10 Air Monitoring

In addition to the HASP measures (Attachment B), personal air monitoring will be performed and documented throughout the removal process. Specifics are provided in the HASP and Personal Air Monitoring Plan included as Attachment B of this RAWP.

3.11 Dust Suppression

Dust suppression will be achieved by use of light, spray mist control measures using water. The use of spray mist will be monitored during SBM consolidation operations by Heritage staff. Since the waste consolidation work will be performed inside the warehouse, any observed pooling of the concrete floor will be wiped up and any sorbents placed in the shipping container with the SBM for disposal.

3.12 Final Site Cleanup

Upon completion of the removal of the SBM, the paved area outside near the entrance and the inside of the warehouse will be swept so that visible SBM has been removed from the concrete surface. Material from the final cleanup will either be placed in the final load of SBM transported to the disposal facility or placed in a separate 55-gallon drum(s) for off-site disposal as hazardous waste. EPA will look to the United States Department of Defense to remove the remaining 4000 drums of SBM at the Facility.

In the event that any further cleaning or measures are deemed appropriate, Heritage will communicate with the respondents and USEPA for any other measures to be conducted. Four thousand (4000) drums of SBM will be left at the warehouse for removal by DOD.

3.13 Periodic Reporting

At the end of each calendar week, the USEPA Site Representative, or designee, shall be provided with a report detailing the following:

A. Amount of waste removed; (by number of drums and sacks, and by weight as reported by the stabilization facility)
B. Log of waste manifests;
C. Results of air monitoring;
D. Discussion of problems encountered and resolutions;
E. Discussion of unresolved problems and potential impacts to removal;
F. Projected activities for the following week;
G. Estimated date of completion.

Site activities will be documented in a field logbook and on appropriate forms, as needed. Photographic documentation of the removal activities will also be maintained.

Upon completion of the removal activities, a *Removal Action Completion Report* will be prepared and submitted to the US EPA. The report shall address the following:

A. Pre and post conditions of the warehouse;
B. Removal activities conducted and any changes in approach necessary to complete the removal, transportation, treatment and disposal of the hazardous waste;
C. Quantities, in pounds of hazardous wastes, and in numbers of containers, transported and removed for disposal;
D. Destination disposal facility used for disposal; if more than one disposal facility was used the name and quantities (weights) will be broken out separately; non-SBM wastes encountered will also be noted, and any associated sampling data provided;
E. A summary of any media monitoring conducted during the removal activities, and any actions required;
F. Statement of actual costs incurred to complete the RCRA Compliance Order;
G. Photographs documenting major stages of removal activities; and
H. Appendices containing all relevant documentation generated during the RCRA Compliance Order Project *(e. g.*, manifests, bills of lading, analytical data, monitoring data *etc.*,).

4 REFERENCES

- Guidance on Conducting Non-time Critical Removal Actions under CERCLA, EPA\540-R-93-057 August 1993.
- RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A May 1994.
- RCRA Waste Sampling-Draft Technical Guidance, EPA/530/D-02/002, August 2002

APPENDIX A

EPA ANALYTICAL DATA

REMOVAL ACTION WORK PLAN
US TECHNOLOGY WAREHOUSE
FT. SMITH AR

US ENVIRONMENTAL PROTECTION AGENCY REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TX 75270

JUNE 2021

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 TELECOM DRIVE, SUITE 400
INDIANAPOLIS, INDIANA 46278

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6 Laboratory
Environmental Services Branch
10625 Fallstone Road, Houston, TX 77099
Phone: (281)983-2100 Fax: (281)983-2248

Final Analytical Report

Site Name ----------	U.S. Technology
Sample Collection Date(s)--	04/17/18 - 04/19/18
Contact----------	David Robertson (6EN-AS)
Report Date----------	06/18/18
Project #----------	18RCRA061
Work Order(s)----------	1804015

Analyses included in this report:

Metals TCLP ICP 1311/6010D — TCLP 1311 Metals Prep

Report Narrative

Metals TCLP ICP 1311/6010D:

Batch B8E0904:

LBK1: Barium is present in the blank solution above the reporting limit (0.35 mg/L); samples with reported results that are not ten or more times higher than the blank concentration are qualified and may be blank affected.

MS1 (Sample Source 1804015-03): Cadmium recovery is outside lower acceptance limits; the source sample results are four or more times higher than the spike added concentration, therefore the spike recoveries cannot be reliably calculated.

Batch B8E0905:

LBK1: Barium is present in the blank solution above the reporting limit (0.26 mg/L); samples with reported results that are not ten or more times higher than the blank concentration are qualified and may be blank affected.

MS1/MSD1 (Sample Source 1804015-09): Cadmium recovery is outside lower acceptance limits; the source sample results are four or more times higher than the spike added concentration, therefore the spike recoveries cannot be reliably calculated.

Standard procedures for quality assurance and quality control were followed in the analysis and reporting of the sample results. The results apply only to the samples tested. This final report should only be reproduced in full.

The reporting limit (sometimes referred to as a quantitation limit) is defined as the lowest concentration at which an analyte can be reliably measured and reported without qualification. Reporting limits are adjusted for sample size, dilution, and matrix interference. Concentrations below the reporting limit are reported as non-detects or <RL.

For a list of ISO 17025 accredited methods go to:
http://region6a.epa.gov/intranet/6md/lab/labisocertification2018.pdf

Report Approvals:

Richard McMillin
Region 6 Laboratory Technical Manager

David W. McQuiddy
Region 6 Laboratory Branch Chief

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6 Environmental Services Branch Laboratory

10625 Fallstone Road
Houston, Texas 77099

Sample Receipt and Disposal

Site Name: U.S. Technology Project Number: 18RCRA061

Data Management Coordinator: Christy Warren

_____ / / _____

Data Management Coordinator Signature Date

Date Transmitted: _____/_____/_____

Please have the U.S. EPA Project Manager/Officer call the Data Management Coordinator at 3-2137 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Christy Warren
Data Management Coordinator
Region 6 Laboratory
6MD-HS

_____/____/_____

Received by and Date

Comments:

The laboratory routinely disposes of samples 90 days after all analyses have been completed. If you have a need to hold these samples in custody longer than 90 days, please sign below.

_____ _____

Signature Date

Please provide a reason for holding:

Environmental Protection Agency

Region 6 Laboratory

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Phone:(281)983-2100 Fax:(281)983-2248

ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Sample Type	Date Collected	Date Received
SD17	1804015-01	Solid	4/17/18 14:20	04/20/18 08:20
SD18	1804015-02	Solid	4/17/18 14:25	04/20/18 08:20
SD29	1804015-03	Solid	4/17/18 14:45	04/20/18 08:20
SB	1804015-04	Solid	4/17/18 13:20	04/20/18 08:20
SD30	1804015-05	Solid	4/18/18 9:00	04/20/18 08:20
SD31	1804015-06	Solid	4/18/18 9:25	04/20/18 08:20
S50	1804015-07	Solid	4/18/18 9:40	04/20/18 08:20
S51	1804015-08	Solid	4/18/18 10:00	04/20/18 08:20
S53	1804015-09	Solid	4/18/18 10:35	04/20/18 08:20
S57	1804015-10	Solid	4/18/18 12:00	04/20/18 08:20
S67	1804015-11	Solid	4/18/18 12:15	04/20/18 08:20
EB	1804015-12	Solid	4/19/18 0:00	04/20/18 08:20
S68	1804015-13	Solid	4/18/18 12:55	04/20/18 08:20
S69	1804015-14	Solid	4/18/18 13:00	04/20/18 08:20
S72	1804015-15	Solid	4/18/18 13:15	04/20/18 08:20
S75	1804015-16	Solid	4/18/18 13:45	04/20/18 08:20
S77	1804015-17	Solid	4/18/18 13:35	04/20/18 08:20
S58	1804015-18	Solid	4/18/18 13:30	04/20/18 08:20

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QC SUMMARY REPORT

Metals TCLP ICP 1311/6010D

B8E0904

Liquid

Samples: 9 **ReExts: 0**

LAB NUMBER	SOURCE
B8E0904-BLK1	
B8E0904-BS1	
B8E0904-LBK1	
B8E0904-MS1	1804015-03
B8E0904-MSD1	1804015-03

B8E0905

Liquid

Samples: 9 **ReExts: 0**

LAB NUMBER	SOURCE
B8E0905-BLK1	
B8E0905-BS1	
B8E0905-LBK1	
B8E0905-MS1	1804015-09
B8E0905-MSD1	1804015-09

TCLP 1311 Metals Prep

B8E0902

Solid

Samples: 9 **ReExts: 0**

LAB NUMBER	SOURCE
B8E0902-BLK1	

B8E0903

Solid

Samples: 9 **ReExts: 0**

LAB NUMBER	SOURCE
B8E0903-BLK1	

Environmental Protection Agency

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-01 **Station ID: SD17**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/17/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**0.31**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**60.5**		0.05	"	"	"
Chromium (7440-47-3)	**0.40**		0.10	"	"	"
Lead (7439-92-1)	**1.38**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-02 **Station ID: SD18**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/17/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**0.38**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**67.0**		0.05	"	"	"
Chromium (7440-47-3)	**0.81**		0.10	"	"	"
Lead (7439-92-1)	**1.16**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-03 **Station ID: SD29**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/17/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**1.24**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**1.08**		0.05	"	"	"
Chromium (7440-47-3)	**1.64**		0.10	"	"	"
Lead (7439-92-1)	**5.70**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-04 **Station ID: SB**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/17/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**0.52**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	U		0.05	"	"	"
Chromium (7440-47-3)	U		0.10	"	"	"
Lead (7439-92-1)	U		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-05 **Station ID: SD30**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**0.79**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**1.01**		0.05	"	"	"
Chromium (7440-47-3)	**0.98**		0.10	"	"	"
Lead (7439-92-1)	**6.35**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

Environmental Protection Agency

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-06 **Station ID: SD31**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**0.83**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**0.56**		0.05	"	"	"
Chromium (7440-47-3)	**0.52**		0.10	"	"	"
Lead (7439-92-1)	**7.17**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-07 **Station ID: S50**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**2.33**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**57.2**		0.05	"	"	"
Chromium (7440-47-3)	**2.66**		0.10	"	"	"
Lead (7439-92-1)	U		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

Environmental Protection Agency

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10625 Fallstone Road, Houston, TX 77099
Phone:(281)983-2100 Fax:(281)983-2248

TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-08 **Station ID: S51**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**2.32**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**70.7**		0.05	"	"	"
Chromium (7440-47-3)	**3.05**		0.10	"	"	"
Lead (7439-92-1)	**0.87**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

Environmental Protection Agency

Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099
Phone:(281)983-2100 Fax:(281)983-2248

TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-09 **Station ID: S53**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**1.84**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**110**		0.05	"	"	"
Chromium (7440-47-3)	**2.92**		0.10	"	"	"
Lead (7439-92-1)	**0.92**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

Environmental Protection Agency

Region 6 Laboratory

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Phone:(281)983-2100 Fax:(281)983-2248

TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-10 **Station ID: S57**

Batch: B8E0904
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/9/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/10/18	06/05/18
Barium (7440-39-3)	**2.26**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**113**		0.05	"	"	"
Chromium (7440-47-3)	**4.69**		0.10	"	"	"
Lead (7439-92-1)	**0.41**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-11 **Station ID: S67**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**2.65**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**37.0**		0.05	"	"	"
Chromium (7440-47-3)	**2.04**		0.10	"	"	"
Lead (7439-92-1)	U		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-12 **Station ID: EB**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/19/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**0.45**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**0.08**		0.05	"	"	"
Chromium (7440-47-3)	U		0.10	"	"	"
Lead (7439-92-1)	U		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-13 **Station ID: S68**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**2.29**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**65.5**		0.05	"	"	"
Chromium (7440-47-3)	**2.45**		0.10	"	"	"
Lead (7439-92-1)	**0.47**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-14 **Station ID: S69**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**2.42**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**50.0**		0.05	"	"	"
Chromium (7440-47-3)	**2.81**		0.10	"	"	"
Lead (7439-92-1)	**0.57**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-15 **Station ID: S72**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**2.63**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**84.0**		0.05	"	"	"
Chromium (7440-47-3)	**3.59**		0.10	"	"	"
Lead (7439-92-1)	U		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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Phone:(281)983-2100 Fax:(281)983-2248

TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-16 **Station ID: S75**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**2.04**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**167**		0.05	"	"	"
Chromium (7440-47-3)	**5.76**		0.10	"	"	"
Lead (7439-92-1)	**0.61**		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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Phone:(281)983-2100 Fax:(281)983-2248

TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-17 **Station ID: S77**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18
Barium (7440-39-3)	**2.52**	**B**	0.10	"	"	"
Cadmium (7440-43-9)	**46.9**		0.05	"	"	"
Chromium (7440-47-3)	**1.35**		0.10	"	"	"
Lead (7439-92-1)	U		0.30	"	"	"
Selenium (7782-49-2)	U		1.00	"	"	"
Silver (7440-22-4)	U		0.10	"	"	"

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TCLP Metals by EPA Method 1311/6010D-ICP

Lab ID: 1804015-18 **Station ID: S58**

Batch: B8E0905
Sample Type: Solid
Batch Matrix: Liquid

Date Collected: 04/18/18
Sample Vol: 50ml
TCLP Prepared: 5/10/18

Sample Qualifiers:

Targets

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed	
Arsenic (7440-38-2)	U		1.00	10	05/11/18	06/06/18	
Barium (7440-39-3)	**1.76**	**B**	0.10	"	"	"	
Cadmium (7440-43-9)	**1.69**		0.05	"	"	"	
Chromium (7440-47-3)	**4.49**		0.10	"	"	"	
Lead (7439-92-1)	U		0.30	"	"	"	
Selenium (7782-49-2)	U		1.00	"	"	"	
Silver (7440-22-4)	U		0.10	"	"	"	spc

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Region 6 Laboratory

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0904 **Sample Type: Liquid**

Blank (B8E0904-BLK1)

Prepared: 5/10/2018 Analyzed: 6/5/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit
Arsenic	U		1.00
Barium	U		0.10
Cadmium	U		0.05
Chromium	U		0.10
Lead	U		0.30
Selenium	U		1.00
Silver	U		0.10

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0904 **Sample Type: Liquid**

LCS (B8E0904-BS1)

Prepared: 5/10/2018 Analyzed: 6/5/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC	%REC Limits
Arsenic	3.86		1.00	4.00	96.5	75-125
Barium	4.12		0.10	4.00	103	75-125
Cadmium	0.09		0.05	0.100	91.0	75-125
Chromium	0.82		0.10	0.800	103	75-125
Lead	0.79		0.30	0.800	99.2	75-125
Selenium	2.24		1.00	2.00	112	75-125
Silver	0.10		0.10	0.100	99.3	75-125

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Region 6 Laboratory

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Phone:(281)983-2100 Fax:(281)983-2248

TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0904 **Sample Type: Liquid**

Leach Fluid Blank (B8E0904-LBK1)

Prepared: 5/10/2018 Analyzed: 6/5/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Arsenic	U		1.00						
Barium	0.35		0.10						
Cadmium	U		0.05						
Chromium	U		0.10						
Lead	U		0.30						
Selenium	U		1.00						
Silver	U		0.10						

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0904 **Sample Type: Liquid**

Matrix Spike (B8E0904-MS1)

Source: 1804015-03 Prepared: 5/10/2018 Analyzed: 6/5/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits
Arsenic	3.84		1.00	4.00		95.9	75-125
Barium	5.26		0.10	4.00	1.24	101	75-125
Cadmium	1.15		0.05	0.100	1.08	66.4 #	75-125
Chromium	2.45		0.10	0.800	1.64	101	75-125
Lead	6.43		0.30	0.800	5.70	91.2	75-125
Selenium	1.75		1.00	2.00	0.02	86.2	75-125
Silver	0.10		0.10	0.100	0.01	87.7	75-125

Environmental Protection Agency

Region 6 Laboratory

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0904 **Sample Type: Liquid**

Matrix Spike Dup (B8E0904-MSD1)

Source: 1804015-03 Prepared: 5/10/2018 Analyzed: 6/5/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Arsenic	3.97		1.00	4.00		99.3	75-125	3.44	20
Barium	5.28		0.10	4.00	1.24	101	75-125	0.38	20
Cadmium	1.16		0.05	0.100	1.08	82.6	75-125	1.40	20
Chromium	2.48		0.10	0.800	1.64	104	75-125	1.02	20
Lead	6.56		0.30	0.800	5.70	108	75-125	2.07	20
Selenium	2.12		1.00	2.00	0.02	105	75-125	19.4	20
Silver	0.10		0.10	0.100	0.01	82.3	75-125	5.52	20

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0905 **Sample Type: Liquid**

Blank (B8E0905-BLK1)

Prepared: 5/11/2018 Analyzed: 6/6/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit
Arsenic	U		1.00
Barium	U		0.10
Cadmium	U		0.05
Chromium	U		0.10
Lead	U		0.30
Selenium	U		1.00
Silver	U		0.10

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Region 6 Laboratory

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0905 **Sample Type: Liquid**

LCS (B8E0905-BS1)

Prepared: 5/11/2018 Analyzed: 6/6/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC	%REC Limits
Arsenic	4.20		1.00	4.00	105	75-125
Barium	4.06		0.10	4.00	102	75-125
Cadmium	0.10		0.05	0.100	97.2	75-125
Chromium	0.82		0.10	0.800	103	75-125
Lead	0.78		0.30	0.800	97.7	75-125
Selenium	2.20		1.00	2.00	110	75-125
Silver	0.10		0.10	0.100	105	75-125

Environmental Protection Agency

Region 6 Laboratory

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0905 **Sample Type: Liquid**

Leach Fluid Blank (B8E0905-LBK1)

Prepared: 5/11/2018 Analyzed: 6/6/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Arsenic	U		1.00						
Barium	0.26		0.10						
Cadmium	U		0.05						
Chromium	U		0.10						
Lead	U		0.30						
Selenium	U		1.00						
Silver	U		0.10						

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0905 **Sample Type: Liquid**

Matrix Spike (B8E0905-MS1)

Source: 1804015-09 Prepared: 5/11/2018 Analyzed: 6/6/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits
Arsenic	4.19		1.00	4.00		105	75-125
Barium	5.74		0.10	4.00	1.84	97.7	75-125
Cadmium	107		0.05	0.100	110	NR #	75-125
Chromium	3.69		0.10	0.800	2.92	96.2	75-125
Lead	1.65		0.30	0.800	0.92	91.2	75-125
Selenium	2.13		1.00	2.00		107	75-125
Silver	0.10		0.10	0.100	0.002	94.0	75-125

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TCLP Metals by EPA Method 1311/6010D-ICP - Quality Control

Batch: B8E0905 **Sample Type: Liquid**

Matrix Spike Dup (B8E0905-MSD1)

Source: 1804015-09 Prepared: 5/11/2018 Analyzed: 6/6/2018

Targets

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Arsenic	4.17		1.00	4.00		104	75-125	0.34	20
Barium	5.68		0.10	4.00	1.84	96.1	75-125	1.13	20
Cadmium	106		0.05	0.100	110	NR #	75-125	0.93	20
Chromium	3.65		0.10	0.800	2.92	91.2	75-125	1.10	20
Lead	1.68		0.30	0.800	0.92	94.5	75-125	1.61	20
Selenium	1.93		1.00	2.00		96.7	75-125	9.74	20
Silver	0.08		0.10	0.100	0.002	80.6	75-125	14.9	20

Environmental Protection Agency

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Qualifiers

B	Blank Related - The concentration found in the sample was less than 10X the concentration found in the associated extraction, digestion and/or analysis blank. Presence in the sample is therefore suspect.
A	This sample was extracted at a single acid pH.
HTS	Sample was prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.
U	The analyte was not detected at or above the reporting limit.

Abbreviations and Symbols

ABN	Acid Base Neutrals (Semivolatile Compounds)
AES	Atomic Emission Spectrometer
BS	Blank Spike
CVAA	Cold Vapor Atomic Absorption
DCB	Decachlorobiphenyl
ECD	Electron Capture Detector
GC	Gas Chromatograph
ICP	Inductively Coupled Plasma
ISTD	Internal Standard
LCS	Laboratory Control Sample
MS	Mass Spectrometer
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	Not Applicable
NPD	Nitrogen Phosphorous Detector
NR	Not Reported
PCB	Polychlorinatedbiphenyl
RL	Reporting Limit
RT	Retention Time

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Region 6 Laboratory

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RPD	Relative Percent Difference
TCLP	Toxicity Characteristic Leaching Procedure
TCMX	Tetrachloro-meta-xylene
VOA	Volatile Organic Analysis
#	Out of QC limits
>LR	The result was greater than the linear range.

Initial pressure in air analyses is the pressure at which the canister was received in psia (pounds *per* square inch absolute pressure).

The pH reported for Volatile liquid samples was tested using a 0-14 pH indicator strip for the purpose of verifying chemical preservation.

The statistical software used for the reporting of toxicity data is ToxCalc 5.0.32, Environmental Toxicity Data Analysis System 1994-2007 Tidepool Scientific Software.

ENVIRONMENTAL PROTECTION AGENCY

OFFICIAL

CHAIN OF CUSTODY RECORD

PROJ. NO. | PROJECT NAME: U.S Technology

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCLP RCRA 8	REMARKS
SD17	4/17/18	2:20		✓	WH/Office Area	1	X	
SD18	4/17/18	2:25		✓	WH/Office Area	1	X	
SD29	4/17/18	2:45		✓	WH/Office Area	4	X	MS MSD
SB	4/17/18	1:20		✓	Prep Sand blank - Main WH	1	X	
SD30	4/18/18	9:00		✓	WH/ office Area	1	X	
SD31	4/18/18	925		✓	" "	1	X	
SD50	4/18/18	940		✓	WH Near South AH 4.18.18 E door	1	X	
SS1	4/18/18	1000		✓	" "	1	X	
SD53	4/18/18	10:35		✓	WH Near South AH 4.18.18 E Door	4	X	MS MSD
SS7	4/18/18	12:00		✓	main intersection of WH	1	X	
SG7	4/18/18	1215		✓	WH Near South AH 4.18.18 E Door	1	X	
EB	4/18/18 4/19/18				Equipment Blank	1	X	Prior to Sampling - can Sand 6-400350 MS soil mix
SD0	4/18/18	12:55		✓	WH Near South 4.18.18 E Door	1	X	Collected w/ Susy - Transville to vacuum

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Angela Hays	4-20-18 8:20				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Timothy Warner	Date / Time 4/20/18 8:20	Remarks Sealed w/ tamper evident tape At 4/18/18 #1257 → cut of by A. Hays Consolidated transport coolers New 1225	
Shipped by: Hand delivered		Airbill Number:			

Distribution: White Accompanies Shipment; Pink to Coordinator Field Files; Green to Report; Yellow Returns with Warrant

EPA 7500-53 (11/96)

ENVIRONMENTAL PROTECTION AGENCY

OFFICIAL

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME					NO. OF CON-TAINERS	TCLP RCRA 8	REMARKS
	US Technology							
SAMPLERS: (Signature)								
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION			
S69	4-18-18	13:00		X	AM 4-17-18 S Main WH Entrance	1	X	
S72	4-18-18	13:15		X	Main WH entrance South AM East 4-17-18	1	X	
S75	4-18-18	13:45		X	Dividing wall of WH	1	X	
S77	4-18	13:35		X	E Side of WH	1	X	Scoop container unaccessable
S58	4-18	13:30		X	N Side of WH	1	X	Scoop Container unaccessable

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4-20-18 8:20				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Christy Warren	Date / Time 4/20/18 18:20	Remarks	Tamper evident lock # 1228
Shipped by:		Airbill Number:			

Distribution: White Accompanies Shipment; Pink to Coordinator Field Files; Green to Report; Yellow Returns with Warrant

EPA 7500-53 (11/96)

APPENDIX B1

HEALTH AND SAFETY PLAN

REMOVAL ACTION WORK PLAN
US TECHNOLOGY WAREHOUSE
FT. SMITH AR

US ENVIRONMENTAL PROTECTION AGENCY REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TX 75270

JUNE 2021

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 TELECOM DRIVE, SUITE 400
INDIANAPOLIS, INDIANA 46278

HEALTH AND SAFETY PLAN

This health and safety plan is designed to establish line responsibilities, personal protection guidelines, air monitoring protocol, specify operating procedures, decontamination procedures, and emergency procedures that may be necessary during the hazardous waste removal work plan at US Technology Warehouse.

CLIENT	**US Technology Warehouse CAFO Respondents** American Airlines, Inc., National Oilwell Varco, VSE Corporation, Solar Turbines, Goodrich Corporation, AAR Landing Gear Corporation, AvTask Inc., Varec Biogas Inc., Honeywell International, Inc., Kansas Dry Stripping Inc.
TELEPHONE NUMBER	No on-site; Heritage Field Manager: Chad Dodson - (918) 627-2671
FACILITY	US Technology Warehouse
FACILITY TELEPHONE NUMBER	None
PROJECT MANAGER	Chad Dodson, Project Manager-HES Ricky Belk is the Tulsa Office Director and will allocate resources.
HERITAGE PROJECT NUMBER	To be assigned
SITE ASSESSMENT:	[✓] COMPLETE [ ] PRELIMINARY

DESCRIPTION OF SITE PROCESSES AND OPERATIONS

Approximately 10,000 drums and 1200 supersacks of SBM are stored in the warehouse. Based on USEPA's review of waste tickets (which show the weights of the drums and sacks), the USEPA has estimated approximately 6.8 million pounds (~3,400 tons) of SBM is present on Site.

PROJECT OBJECTIVES	Consolidate & Remove metal contaminated spent blasting media ("SBM") contained in drums and super-sacks presently stored inside the Site warehouse.
PROPOSED DATE(S) OF WORK	June 2021
HEALTH AND SAFETY PLAN PREPARED BY **TITLE**	Matt Kovach, CSP Corporate Health and Safety Systems Leader

REVIEW AND APPROVALS

PROJECT DIRECTOR _____ DATE:
(signature)

PROJECT MANAGER _____ DATE
(signature)

HEALTH/SAFETY MANAGER _____ DATE
(signature)

TABLE OF CONTENTS

Emergency procedures

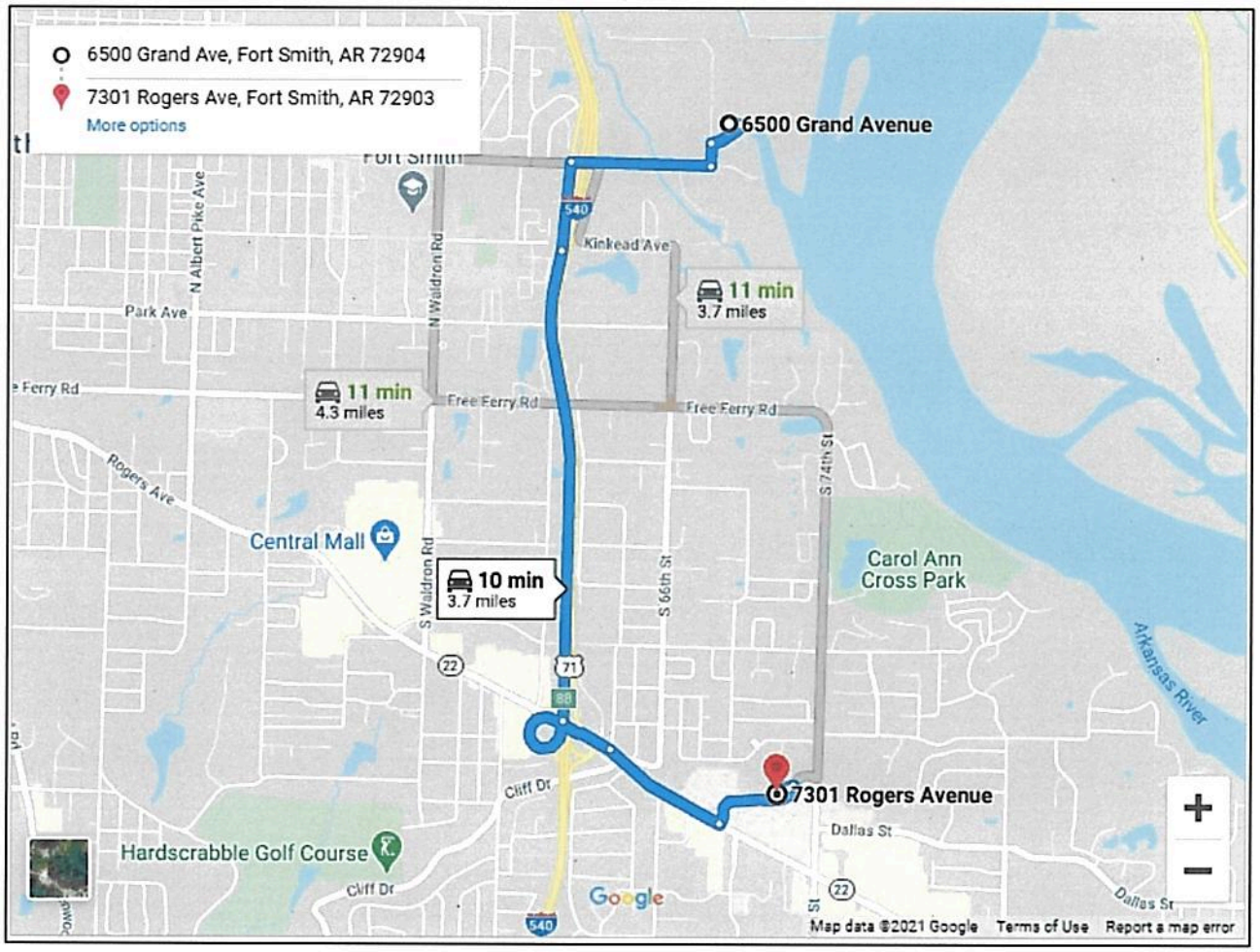
Emergency Response Contacts

Agency/Facility Name	Phone Number	Response Time
Ambulance	479-783-1078	8 minutes
Fire Department	479-783-4052	11 minutes
Police Department	479-709-5000	3 minutes
Hospital	479-314-6000	6 minutes
State Emergency Response	501-661-2136	3 hours
National Response Center	800-424-8802 202-462-2657	N/A
Poison Control Center	800-382-9097	N/A
Office	877-463-8778	10 minutes
Heritage	1-800-48-SPILL	N/A

Emergency Routes

Hospital (attach a map):

Mercy Hospital Forth Smith
7301 Rogers Ave, Fort Smith, AR 72903



Emergency Equipment Available

The following emergency equipment (indicated by an "X") is available on site:

	Location
Communications Equipment:	
☐ Public Telephones	
☐ Private Telephones	
☒ Mobile Telephones	On person
☒ Two-way Radios	On person
☐ Air Horn	
☐ Rope Tugs	
☒ Hand Signals	
Medical Equipment	
☒ First Aid Kits	Heritage Truck
☐ Stretcher/Backboard	
☒ Eyewash/Shower	Common Areas
☐ Oxygen	
☐ Other	
Fire Fighting Equipment	
☒ Fire Extinguishers	Heritage Truck
☐ Other	
Spill or Leak Equipment	
☐ Absorbent Boom Pad	
☒ Dry Adsorbents	
☒ Tools	Heritage Truck
☐ Other	

Other Related Documents

- ☐ Confined Space Entry Policy & Procedures
- ☐ Hot Works Policy & Procedures
- ☐ Lock Out/Tag Out Policy & Procedures
- ☐ Asbestos Handling Policy & Procedures
- ☐ Spill Containment Policy & Procedures
- ☐ Pipe Breaking Policy & Procedures

Communication Procedures

A communication system will be established in order for personnel to communicate with each other on-site, as well as off-site.

Hand signals, air horn and two-way radios may be utilized to communicate between exclusion zone operators and support zone personnel. Emergency hand and audible signals that can be used in the event of an emergency include:

- Clutching throat - personal distress

A phone system will be available to communicate to off-site locations.

Emergency Procedures

On-site personnel will use the following standard emergency procedures. The Project Manager shall be notified of any on-site emergencies and will be responsible for ensuring that appropriate procedures are followed.

a. Personal Injury: Upon notification of an injury, all site personnel will lend assistance to remove the injured from the work area, if necessary. The Project Manager will determine the extent of injury and determine first aid measures necessary. Contact should be made for an ambulance to transport injured to a medical facility (if required). If injured person is contaminated with hazardous materials, decontamination will take place to the extent possible. If the cause of the injury does not affect the performance of other site personnel, normal operations may resume. If there is risk to others, all site personnel will move from the work area until further instruction is given. Activities will cease until the risk is removed or reduced.

b. Personal Protective Equipment Failure: If a site worker should experience a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the working area. Re-entry shall not be permitted until the equipment has been repaired or replaced.

c. Other Equipment Failure: If any of the equipment on-site fails to operate properly, the Project Team Leaders will be notified. They will determine the effect of this failure on continuing operations. If the failure effects the safety of personnel or prevents completion of the work plan tasks, all personnel will leave the area until the situation is evaluated and appropriate actions performed.

d. Fire/Explosion: Upon notification of a serious fire or explosion, the local fire department will be contacted at once. A serious fire is considered to be one that is beyond the incipient stage. All personnel shall move to a safe distance from the involved area. The Project Manager or his designee shall direct fire equipment arriving at the scene to the appropriate area. Personnel will attempt to extinguish small or incipient stage fires.

e. Spills or Leaks: In the event of a spill or a leak, employees will:
   (1) Locate the source of the spillage and stop the flow if it can be done safely.

(2) Begin containment and recovery of the spilled materials.
(3) Arrange for clean-up of the area.

f. Weather Emergencies: In the event of heavy weather, the Project Manager or a site supervisor will oversee the securing of the site, materials and equipment in order to prevent the loss or migration of hazardous materials from the site and to prevent public access to the site.

g. Evacuation Routes: Evacuation should be conducted immediately, without regard for equipment, under conditions of extreme emergency.

h. In All Situations: When an on-site emergency results in evacuation, personnel shall not re-enter until:
(1) The conditions resulting in the emergency have been corrected.
(2) The hazards have been reassessed.
(3) The Site Safety Plan has been reviewed.
(4) Site personnel have been briefed on any changes in the Site Safety Plan.

i. General Chemical First Aid Procedures
(1) **INHALATION**
- Remove victim to fresh air

NOTE: DO NOT ENTER CONFINED SPACE OR SPILL AREA WITHOUT PROPER PROTECTION
- Give artificial respiration if person is not breathing
- Get medical attention

(2) **EYE CONTACT**
- Flush immediately with large amounts of water for at least 15 minutes, while holding eyelids open
- Get medical attention promptly after flushing eyes with water

NOTE: Flushing for 30 minutes is recommended if contact with strong alkali's occurs (caustic soda - sodium hydroxide)

(3) **SKIN CONTACT**
- Flush affected area with large amounts of water while removing contaminated clothing
- Flush for 15 minutes if contact with concentrated chemical
- If irritation persists, get medical attention
- Wash contaminated clothing before reuse

(4) **INGESTION**
- The decision whether to induce vomiting is chemical-specific
- Do not induce vomiting without first contacting the MSDS Poison Control Center or local emergency room for instructions. The MSDS may have specific instructions
- In some cases, vomiting will cause additional damage, so the use of an antidote is sometimes appropriate
- If vomiting occurs uncontrollably, keep head below hips to prevent vomit from getting into lungs

- Never induce vomiting or give anything by mouth to an unconscious person
- Get medical attention as soon as possible

Site assessment

Facility Description

(describe current and past uses of the site, age, condition, *etc.*)

The Site was used by UST for the storage of SBM intended to be recycled at other UST facilities. As such, the SBM was handled and shipped to the Site as a RCRA exempt recyclable material. However, because the material was never actually recycled by UST, USEPA has determined the SBM is characteristically hazardous waste. EPA has ordered the respective generators to remove and properly dispose of the material in accordance with state and federal laws.

Unusual Features

(containers, building, dikes, power lines, terrain, degree of contamination, *etc.*)

Status

☐ Active ☒ Inactive

Hazard assessment

Existing Features

☐ Tanks (aboveground)
Size:
Size:

☒ Drums
55-gallon

☐ Tanks (below ground)
Size:
Size:

☐ Lagoon(s), Pit(s), Pond(s)

☒ Containers
Supersacks

☐ Unusual Hazards
(*i.e.*, neighboring facilities, public and private properties)

Type: Steel Drums Supersacks
Quantity: 10,000 1200

Physical & Biological Hazards

☒ Heat
☐ Cold
☐ Radiation
☒ Other Wildlife nesting. Copperheads prevalent in area hemotoxin venom.

☐ Confined Space Entry
☒ Noise (from equipment)
☐ Poisonous Plants

Known Substances On-Site

☐ Acids Strong
☐ Acids Weak
☐ Asbestos
☐ Caustics Strong
☐ Caustics Weak
☐ Cyanides
☐ Dyes/Inks
☐ Halogenated Gases/Solvents
☒ Metals
☐ Pesticides
☐ Other

☐ Phenol/Cresol
☐ Pickling Liquors
☐ Pigments
☐ PCBs
☐ Oils/Greases
☐ Oily Waste
☐ Solvents
☐ Sludge's
☐ Gasoline

Health Hazard of Potential Contaminants Encountered

Contaminant	TLV	IDLH	Primary Route of Entry	Symptoms	Target Organs
Cadmium	0.01 mg/m^3	9 mg/m^3	Inhalation	Pulmonary edema and chemical pneumonitis develop, leading to death due to respiratory failure	Liver and kidneys
Chromium	0.5 mg/m^3	9 mg/m^3	Inhalation	Runny nose, sneezing, coughing, itching and a burning sensation.	Respiratory tract
Lead	0.05 mg/m^1	100 mg/m^3	Inhalation	Joint muscle pain, difficulties with memory or concentration, headache, mood disorders	Kidneys, immune system, reproductive system, and liver

ARE MSDSs AVAILABLE? ☐ YES ☒ NO ATTACH AVAILABLE MSDSs)

Description of Potential Hazards to the Public and Environment

Based on the scope of work, the potential for exposure to the public is not expected on this site.

Environmental and Personnel Monitoring

Equipment Needed	Frequency of Use	
☐ LEL O_2 Monitor	continuous / hourly / daily / other	_____
☐ LEL/O_2/H_2S Monitor	continuous / hourly / daily / other	_____
☐ PHOTO IONIZATION DETECTOR	continuous / hourly / daily / other	_____
☐ ORGANIC VAPOR ANALYZER	continuous / hourly / daily / other	_____
☐ TIP II/Microtip	continuous / hourly / daily / other	_____
☐ Hand-Held Aerosol Monitor (HAM)	continuous / hourly / daily / other	_____
☐ Aerosol Monitor	continuous / hourly / daily / other	_____
☐ H2S Monitor	continuous / hourly / daily / other	_____
☐ HCN Monitor	continuous / hourly / daily / other	_____
☐ Radiation Meter	continuous / hourly / daily / other	_____
☐ Detector Tubes	continuous / hourly / daily / other	_____
List Types		
☐ Heat Stress Monitor	continuous / hourly / daily / other	_____
☐ Other	continuous / hourly / daily / other	_____
☐ Other	continuous / hourly / daily / other	_____
☐ Long Term Ambient/Personnel Monitoring (samples require lab analysis)	continuous / hourly / daily / other	_____
☒ SKC/Gillian Pumps	continuous / hourly / daily / **other**	Weekly Sampling
☐ Charcoal Tubes	☐ PVC Filters	
☐ Silica Gel Tubes	☒ MCEF Filters	
☐ Orbo Tubes	☐ Impingers (Soln:____)	

Personal air monitoring for cadmium, chromium and lead will be sampled using Gilian sampling pumps with 37mm MCEF, 3pc, 0.8µm cassettes.

Equipment Calibration

Equipment will be calibrated per the manufacturer's specifications.

Medical Surveillance

All Heritage employees are included in Heritage's Medical Surveillance program. This program involves medical monitoring prior to employment, on an annual basis and at termination of employment at no cost to employees. Details of Heritage's Medical Surveillance Program are outlined below. If additional medical surveillance procedures are necessary for this project, they are outlined below.

Medical Monitoring Plan

All employees whose job requires them to;

a. Enter the hazardous waste site;
b. Otherwise come in contact with hazardous materials (e.g., contaminated equipment, laboratory samples);
c. Perform physical activities more strenuous than normal; must be included in a medical surveillance program. This program should involve medical monitoring prior to employment, on an annual basis and at termination of employment as specified by 29 CFR 1910.134 and 29 CFR 1910.120.

All employees involved in hazardous waste activities must be medically fit to wear respiratory protection as required in (OSHA Respiratory Protection Standard 29 CFR 1910.134) and Hazardous Waste and Emergency Response Operations Standard (HAZWOPER) (29 CFR 1910.120). All on-site personnel must provide certification to assure medical fitness with OSHA respiratory protection protocol and respiratory fit-testing (qualitative or quantitative).

In addition, all on-site personnel must be actively involved in a comprehensive medical surveillance program as required in HAZWOPER Standard (29 CFR 1910.120) to ensure physical capabilities.

The Heritage medical surveillance program includes the following examinations:

a. Physical Examination - During this physical examination the physician considers the individual's capability to wear respiratory protection. Pulmonary function, cardiovascular status and weight carrying capacities is evaluated. Ability to detect odors is also be included. A licensed Occupational Physician performs the examination. The physician provides a written certification that each employee

is medically fit to wear respiratory protection. Additional testing protocol include:

b. Audiogram
c. Wellness blood profile - including complete blood count (CBC), SMAC-24, coronary risk profile.
d. Spirometry
e. Respirator certification (by examining physician)
f. Titmus and Snellen Vision Screen
g. Electrocardiogram - resting
h. Chest x-ray
i. Methemoglobin
j. Microurinalysis
k. Physician's written medical opinion

Special Considerations

a. Certain prescription drugs may affect an individual's ability to work in temperature extreme conditions. The physician should note special limited capabilities under these conditions.
b. The purpose of the site safety and health plan is to prevent worker exposure. Biological monitoring activities measure the amount of a specific chemical or its metabolite, which is excreted from the body. Examples include phenol monitoring in urine for benzene exposures, lead in blood, chlorinated hydrocarbon solvents in exhaled breath, etc.
c. Due to work proposed at the site concentrations of contaminants, additional biological monitoring parameters, beyond the comprehensive medical surveillance program, should not be necessary.

Personal protective equipment

Protective Equipment Level Necessary for On-Site Activities

☐ Level A ☐ Level B ☒ Level C ☒ Level D

Permitted Modifications:

Protective Equipment Needed (Check all that apply)

Respiratory Protection

Supplied Air Respirators

- ☐ SCBA
- ☐ Airline W/Escape SCBA
- ☐ Airline

Air Purifying Respirators

- ☒ Full Face Air Purifying Respirator

Cartridges (MSA)

- ☐ GMD - Ammonia/Methylamine TC-23C-43
- ☐ GMC - Organic Vapor/Acid Gases TC-23C-47
- ☐ GMA - Organic Vapor TC-23C-40
- ☐ Metallic Mercury Vapor/Chlorine TC-23C-629
- ☐ GMB-H Acid Gases/Particulates TC-23C-150
- ☐ GMA-F Organic Vapor/Dust & Mist TC-23C-151
- ☐ GME-H Super Cartridges with HEPA Filter Organic Vapor/Acid Gases/ Particulates TC-23C-151
- ☒ Type H Dusts/Fumes/Mists TC-21C-135
- ☐ GME - Super Cartridges
- ☐ GMB - Acid Gases/Formaldehyde TC-23C-41

Clothing

- ☐ Work Uniform
- ☒ ProShield 2
- ☐ CPF I
- ☐ CPF II
- ☐ CPF III

Totally Encapsulated Chemical Protective Suit

- ☐ Butyl
- ☐ Chemrel
- ☐ PVC
- ☐ Teflon
- ☐ Other

Gloves

- ☒ Nitrile Liner Gloves
- ☐ PVC
- ☐ Nitrile
- ☐ Butyl
- ☐ Viton
- ☐ Neoprene
- ☐ Silvershield

Miscellaneous

- ☒ Steel Toe Shoes/Boots
- ☐ Chemical Resistant Boots
- ☐ PVC Boot Covers
- ☒ Hard Hat
- ☒ Safety Glasses
- ☐ Chemical Goggle
- ☐ Face Shield

Personal Protection Levels for Designated Areas

Based on a preliminary evaluation of the potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

TASK	PROTECTION LEVEL (LEVEL A, B, C,D)
Equipment staging	D
Handling Drums/Supersacks	C
Dispensing Drums	C
SBM spill cleanup and decontamination	C

NO CHANGES TO THE SPECIFIED LEVEL OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE PROJECT MANAGER OR SAFETY/HEALTH OFFICER.

Protective Equipment Levels

The following is a brief description of the personal protective equipment, which may be required during various phases of the project. Although there is some flexibility to custom fit the actual items of protective equipment to the real-life situation, in general the levels of protection are defined as follows.

a. LEVEL A - The highest level of protection used when:
   (1) Unknown chemicals are involved and there is high risk for release.
   (2) Chemical concentrations are above safe levels (IDLH atmospheres).
   (3) Extremely hazardous substances are present or suspected.
   (4) Chemicals and/or vapor and mists are destructive to tissue.
   (5) Oxygen deficient atmospheres or confined space conditions.

b. LEVEL B - The second highest level of protection used when:
   (1) Concentrations of chemicals in the air are IDLH or above the protection factor provided by a APR with full-face mask.
   (2) Oxygen deficient atmospheres or confined space conditions.
   (3) Vapor absorption or contact with skin not critical.

c. LEVEL C - An intermediate level of chemical protection used when:
   (1) Air concentrations of chemical are potentially above or known to be above ACGIH TWA-TLVs APR will provide adequate protection
   (2) Non-IDLH atmospheres
   (3) Chemicals are not destructive to skin

d. LEVEL D - Minimum level of chemical protection used when:
   (1) No concentrations of chemicals in excess of ACGIH TWA-TLV's
   (2) No hazardous effect from skin contact or inhalation

Minimum OSHA-recommended Requirements for Worker Protective Levels

Protection Level	Equipment
Level A	(1) Pressure-demand, full-face SCBA[1] or pressure-demand air-supplied respirator with escape SCBA (2) Fully encapsulating, chemical-resistant suit (3) Inner and outer chemical-resistant gloves (4) Chemical-resistant safety boots (5) Hard hat
Level B	(1) Pressure-demand, full-face SCBA or pressure-demand air-supplied respirator with escape SCBA (2) Chemical-resistant clothing (overalls and long-sleeved jacket; hooded one- or two-piece chemical splash suit; disposable chemical-resistant one-piece suit) (3) Inner and outer chemical-resistant gloves (4) Chemical-resistant safety boots (5) Hard hat
Level C	(1) Full-faced, air-purifying, canister-equipped respirator (2) Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two-piece chemical splash suit; disposal chemical-resistant one-piece suit) (3) Inner and outer chemical-resistant gloves (4) Chemical-resistant safety boots (5) Hard hat (6) Safety glasses, goggles, or face shield as necessary
Level D	(1) Safety boots (2) Safety glasses or splash goggles (3) Hard hat (4) Gloves as necessary (5) Standard work uniform or coveralls (6) ProShield 2 Coveralls (Modified Level D)

[1]SCBA = Self-contained breathing apparatus

Decontamination procedure

Detail Decontamination Method and Procedure

All sampling material, equipment, and non-disposable materials that has come into contact with waste materials facilities shall be decontaminated as follows:

- ☒ Solid materials will be scraped and removed from the equipment
- ☒ Equipment will be washed with a non-phosphate detergent solution.
- ☒ Equipment will be water rinsed.

Decontamination Equipment Needed

- ☒ Disposable protective clothing/ equipment
- ☒ Water
  - ☒ Low pressure ☐ High pressure
- ☐ Deionized Water
- ☐ Steam
- ☒ Detergent/Water
- ☐ Compressed Air
- ☐ Scrub Brushes/Scrapers/Sponges
- ☐ Chemical Detoxification
- ☐ Acids ☐ Bases ☐ Solvents
- ☐ Containers (buckets, wading pools)
- ☐ Hoses

Segregation, Decontamination and Disposal

☐ LEVEL A - Segregated equipment drop, boot cover and glove wash, boot cover and glove rinse, tape removal, boot cover removal, outer glove removal, suit/safety hat removal, SCBA backpack removal, inner glove removal, inner clothing removal, field wash, redress.

☐ LEVEL B - Segregated equipment drop, boot cover and glove wash, boot cover and glove rinse, tape removal, boot cover removal, outer glove removal, safety boot removal, SCBA backpack/airline removal, face piece removal, inner glove removal, inner clothing removal, field wash, redress.

☒ LEVEL C - Segregated equipment drop, boot cover and glove wash, boot cover and glove rinse, tape removal, boot cover removal, outer glove removal, safety boot removal, splash suit removal, face piece removal, inner glove removal, inner clothing removal, field wash, redress.

☒ LEVEL D - Segregated equipment drop, boot and glove wash, boot and glove rinse.

Decontamination Procedure Modification

(personnel surfaces, materials, instruments equipment, *etc.*)

Disposal Procedures

(contaminated equipment, supplies, disposal wash water)

All items shall be disposed in a manner agreeable to both representatives of EPA R6 and representatives of Heritage Environmental Services, LLC (Heritage), and in accordance with Federal, State and Local regulations.

Used PPE will be placed in containers, sealed, labeled and accumulated adjacent to the decontamination area. Any reusable PPE that is damaged beyond repair or that cannot be properly decontaminated will be contained in the same manner. Discharged PPE containers will remain closed except when adding to the contents. Once a used PPE container becomes full, it will be disposed of at permitted off-site hazardous waste treatment or disposal facility.

Organization/Coordination

Personnel On-Site

a. Division or Project Manager(s): Ricky Belk (ricky.belk@heritage-enviro.com)

b. Supervisors: Chad Dodson (chad.dodson@heritage-enviro.com)

c. Health/Safety Coordinator: Chad Dodson (chad.dodson@heritage-enviro.com)

d. Laborers/Technicians: Colton Macy, Dakota Gifford, Matthew Shelley

e. Sub-Contractors: None

Personnel Duties

a. Project Manager(s) will be responsible for :
   (1) Overall project management activities;
   (2) Ensuring scope of services completed as specified in proposal;
   (3) Supervising activities to ensure all applicable legal and safety requirements are met.

b. Supervisors will be responsible for:
   (1) On-site supervision of activities;
   (2) Supervision of laborers and technicians;
   (3) Ensuring that all procedures (security, health and safety, decontamination and emergency) are followed.

c. Health/Safety Coordinator (Chad Dodson with assistance from Colton Macy) will be responsible for:
   (1) On-site health and safety surveillance to ensure compliance with established health, safety and environmental protection procedures;
   (2) Performance of all on-site air monitoring activities and surveillance of environmental conditions;
   (3) Providing first aid and CPR when necessary; and
   (4) Maintaining all personal, ambient and environmental surveillance logs.

d. Laborers/Technicians will be responsible for actual labor and performance of site activities necessary to complete project.

e. Sub-Contractor's Duties: None

Information and Training

- All site personnel will read the above Site Safety and Health Plan and are familiar with its provisions.
- All personnel entering exclusion zone will be properly trained in accordance with OSHA Hazardous Waste Worker and Emergency Response (29 CFR 1910.120).
- All personnel involved in excavation activities will be properly trained in the OSHA Excavation Standard (29 CFR 1926.650).
- Only adequately trained equipment operators will be utilized on all activities.

DATE	NAME	SIGNATURE

Information Training Conducted at:

Date / Time: _____ Project: _____

Manager: _____
(Signature)

*** All VISITORS AND SUBCONTRACTORS MUST READ AND ENDORSE THE FORM**

HERITAGE

JOB SAFETY ANALYSIS

Work Location: 6500 Grand Ave, Ft Smith Arkansas	Task Description: Dispense drums/supersacs into roll-off containers	4/22/2021
Required PPE: Level C, refer to HASP	**IN CASE OF EMERGENCY CONTACT THE FOLLOWING:**	
Required Tools: Drum opnening and supersac lifing tools/atachments	Company Rep: Ricky Belk	Phone #: 918-627-2671
Required Equipment: Powered Industiral Trucks	Customer Rep. American Airlines and EPA R6	Phone #:
Required Procedures (e.g. Operating, Safety, etc.): Powered Industrial Trucks, Respiratory Protection, PPE	Emergency / Hospital: 7301 Rogers Ave, Fort Smith, AR 72903	Phone #: 479-314-6000

GENERAL HAZARDS:

☒ Slips, trips, falls	☐ Pinch points	☒ Lifting / bending / twisting	☒ Low lighting	☐ Uneven surfaces	☒ Moving parts
☒ Hot / cold surfaces	☐ Extreme weather	☒ Plants / wildlife / insects	☐ Noise	☐ Vibration	☒ Vehicular traffic

☒ Other (Mechanical, Motion, Gravity, Radiation, Biological, Chemical, Pressure, Electrical): Cadmium, Chromium, and Lead (sandblast material)

STOP and Discuss and Document potential scenarios and conditions that will trigger Stop Work Authority:

Task Steps Listed in Sequential Order	HAZARD INFORMATION Complete for <u>each task step</u>: • Document potential Hazard(s) • How could a team member be seriously injured or killed? • Could the hazards lead to property damage? How? • Could the hazards lead to loss of containment? How? • List potential dropped objects associated with this step:	Safeguards / Mitigations	Check all Critical Steps Where Work MUST be STOPPED if not executed exactly as planned
Step1: Roll-off positioning	Struck by and or property damage while positioning roll offs	Spotter and hand signals	☐
Step2: Drum handling and transportation	Drum falls from pallet and or forklift attachments	Forklift training, stability triangle, line of fire awareness and stop work authority	☐
Step3: Supersac handling and transportation	Supersac falls from forklift forks	Forklift training, stability triangle, line of fire awareness and stop work authority	☐
Step4: Drum dispensing into roll-off	Drum falls and or fugitive dust	Drum attachment, respiratory protection, and line of fire awareness	☐
Step5: Supersac placement into roll-off	Supersac falls	Utilizing all 4 lifting straps and spotter	☐
Step6:			☐
Step7:			☐
Step 8:			☐

JSA Approval – Please review and sign

_____	_____	_____
SIGNATURE	SIGNATURE	SIGNATURE
_____	_____	_____
SIGNATURE	SIGNATURE	SIGNATURE
_____	_____	_____
SIGNATURE	SIGNATURE	SIGNATURE

ATTACHMENT B2

PERSONAL AIR MONITORING PLAN
REMOVAL ACTION WORK PLAN
US TECHNOLOGY WAREHOUSE
FT. SMITH AR

US ENVIRONMENTAL PROTECTION AGENCY REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TX 75270

JUNE 2021

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 TELECOM DRIVE, SUITE 400
INDIANAPOLIS, INDIANA 46278

Contents

LIST OF TABLES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

The purpose of the Personal Air Monitoring Plan (PAMP) is to monitor air quality for Heritage Environmental Services, LLC (Heritage) employees (no subcontractors will be working at the Site) involved with the consolidation of Spent Blast Material (SBM) supersacks and drums inside the building for the Removal Action at the US Technology Warehouse (UST) in Fort Smith, Arkansas. A Health and Safety Plan (HASP) provides a hazard assessment, procedures, and specifies controls for the Removal Action Work Plan (RAWP) implementation.

The Removal Action involves the transfer and consolidation of Spent Blast Material (SBM) presently stored in steel 55-gallon drums and supersacks inside a warehouse. The compounds of concern identified by US EPA sampling and generator knowledge are cadmium, chromium, and lead.

The objective of the PAMP, to be used in conjunction with the HASP, is to monitor airborne concentrations of cadmium, chromium and lead in workers breathing zone during the transfer and consolidation activities.

2.0 ORGANIZATION OF PLAN

This plan addresses personal air monitoring of Particulate Matter (PM) 2.5 and PM 10 for cadmium, chromium and lead. The PAMP describes the selected sampling equipment, sampling strategy and how the analytical results will be analyzed. During the removal activities, the Plan shall be implemented by the onsite HAS officer – Chad Dodson, with assistance from Colton Macy.

3.0 STOP WORK AUTHORITY

All Heritage employees have stop work authority during a project if they believe working conditions present an unreasonable risk. This authority allows all employees to stop any job at any time and allows Heritage workers to remain safe.

4.0 EXPOSURE MONITORNING

This section describes the methods for personal air monitoring, including the equipment to be used and the initial monitoring and calibration.

4.1 EQUIPMENT SELECTION

Personal air monitoring for cadmium, chromium and lead will be conducted using GilAir Plus sampling pumps (manufactured by Gilian). The GilAir Plus features a wide dynamic flow and pressure ranges to address all personal air sampling methods with flow ranges between 1 and 5,000 cc/min. The GilAir Plus can perform both high-flow constant pressure and constant flow (450-5,000 cc/min) and low-flow constant pressure and constant flow (1-499 cc/min) with a single pump without external adaptors. A specification sheet for the GilAir Plus sampling instrument is attached to this plan.

Table 1 Sampling Train				
Sampling Pumps	**Calibrator**	**Collector Type**	**Primary Use**	**Media Holder**
Gil Air Plus	Gilibratotor-3 ISO/IEC 17025	Cassette, 37mm MW MCE, 2pc	Metals	Filter Holder

4.2 EQUIPMENT CALIBRATION

All air monitoring equipment will be calibrated prior to each use. The calibrations will be performed using Gillian's recommended calibrator in accordance with the instrument(s) calibration instructions. If additional monitoring instruments are utilized during the course of the project, then appropriate calibration routines will be adopted based on the respective manufacturer's recommended practices.

Heritage will utilize Gilian equipment which has the capability to generate printable calibration reports. The Gilibrator 3, standard dry cell calibrator has live, instantaneous flow measurements, accurate within 1% of reading. The constant, low interference back pressure throughout the calibration sets allow for consistent airflow accuracy. Heritage will follow manufactures guidelines for operation of the equipment.

4.3 Initial Monitoring

Heritage will perform initial monitoring during the first working day of the SBM handling operations to determine representative contaminant exposure levels for the project. Employees will be fitted with personal air sampling pumps and 37mm cassettes in their breathing zone. This sampling will monitor airborne concentrations of cadmium, chromium and lead in the employees breathing zone over a period of approximately 8 hours. Per the HASP, Heritage employees will don elastomeric full facepiece respirators and P100 cartridges with an assigned protection factor (APF) of 50 during loading activities. An APF of 50 means the device can be safely used in an atmosphere that has a hazardous concentration up to 50 times the Permissible Exposure Limit (PEL) of the hazardous constituents.

Heritage will perform personal air monitoring for air particulates on a weekly basis. Heritage staff will not wear air sampling pumps on a daily basis when documented analytical results are below the action limit. Sample cassettes and field blanks will be sent to the accredited laboratory on a weekly basis for analysis. Field blanks will be analyzed in accordance with laboratory specifications. The action levels (ALs) for SBM constituents are provided in Attachment A-OSHA AL, PEL and IDLH Values. If analytical results are below the ALs, personal air sampling will be repeated on a weekly basis. If sampling results are above the ALs, then additional monitoring and/or controls will be required.

4.4 Additional Monitoring and Controls

In the event an action level is exceed, Chad Dobson and Matt Kovach, in consultation with Ricky Belk will formulate appropriate changes to working processes to reduce dust levels and or increasing personal protective equipment. Specific dust control strategies may include dust collection systems, enclosures and or wetting. Specific personal protective equipment includes increasing respiratory

protection to a powered air purified respirator (PAPR) with an assigned protection factor of 1,000. Heritage will perform air monitoring on a daily basis until analytical results are below the action limits.

4.5 Exposure Limits

The enforceable exposure limit is the PEL set by the Occupational Safety and Health Administration (OSHA). The National Institute of Occupational Safety and Health (NIOSH) develops recommended exposure limits (RELs) for hazardous substances. To formulate these recommendations, NIOSH evaluates all known available medical, biological and engineering, chemical trade, and other information relevant to the hazard. Other exposure limits that can be considered in when making personal protective equipment selections include state-OSHA exposure limits, (American Conference of Governmental Industrial Hygienists) ACGIH TLVs, and AIHA Workplace Environmental Exposure Levels (WEELs). Exposure limits based on a thorough evaluation of more recent or extensive data are given priority. Per the HASP, Heritage will utilize OSHA action limits for cadmium, chromium and lead monitoring. Attachment B provides OSHA AL's and PEL's.

5.0 Quality Assurance / Quality Control

5.1 Sample Size

Heritage will follow NIOSH's recommended sample size for personal monitoring. This standardized sample size will allow Heritage to have statistically valid dataset at the 95% upper confidence level. The data will be representative, reproducible, and readily interpretable. NIOSH methods will be used to determine limit quantification for minimum and maximum sampling times to ensure collection of enough mass while not overloading cassette filters.

5.2 Field Blanks

Heritage will follow NIOSH's analytical method instructions for blanks per field set. If a field blank is found to be detectable, the blank value from analysis will be subtracted from each sample value.
Field blanks (cassette's) will be taken into the field and handled as regular samples but not exposed to a sampling event, then returned to the lab for analysis. Blanks will be sent on a weekly basis with field samples.

Blanks will be the same lot number used for sampling.

5.3 Laboratory Validation

Heritage will utilize SGS Galson (Lab ID 100324) to perform analytical services. Galson is accredited by American Industrial Hygiene Association Laboratory Accreditation Program (AIHA-LAP, LLC). AIHA-LAP, LLC accredited laboratories have successfully completed a rigorous process including, application and background about the laboratory, its staff, facilities and quality control programs; a site audit and detailed inspection of the laboratory personnel, analytical standard operating procedures, reporting formats and quality assurance programs. The accreditation process is followed by AIHA-LAP, LLC Industrial Hygiene Laboratory Accreditation Committee (IHLAC) and scoring from Proficiency Analytical Testing (PAT) program. Participation in this quarterly program is a requirement for accreditation.

5.4 Analytical Methods

The NIOSH Manual of Analytical Methods (NMAM) is a collection of methods for sampling and analysis of contaminants in workplace air, and in the blood and urine of workers who are occupationally exposed. These methods have been developed or adapted by NIOSH or its partners and have been evaluated according to established experimental protocols and performance criteria. NMAM also includes chapters on quality assurance, sampling, portable instrumentation, etc.

NIOSH recommends that the best method available be used for making each measurement. Heritage employs an Industrial Hygienist to determine the sampling protocol, considering analytical accuracy, cost, and optimum sample number. Evaluation methods undergo an initial evaluation to demonstrate performance.

NIOSH has published methods developed in cooperating laboratories. These methods evaluated using established experimental protocols. These methods were selected based upon priorities established in a joint NIOSH/AIHA survey of participating laboratories.

Table 2 NIOSH Analytical Sampling Methods

Airborne Material Sampled	NIOSH Method No.	Sampling Flow Rate (LPM)	Sampling Volume Min/Max		Analytical Technique	Sample Collection Media
Cadmium	7303	1-4	200	2,000	ICP	Mixed Cellulose Ester Filter
Chromium	7303	1-4	200	2,000	ICP	Mixed Cellulose Ester Filter
Lead	7303	1-4	200	2,000	ICP	Mixed Cellulose Ester Filter

ICP – Inductively coupled plasma.

6.0 Reports

6.1 Project Documentation

Analytical results from air monitoring will be maintained by Heritage in the project files in accordance with Heritage's document retention protocols. Gillian equipment documents serial numbers, start time, end time, duration, pump settings, firm ware, calibration specifications, flow rates and modes of operation. Equipment reports and analytical records will be included in the final report to EPA R6. An example report is provided in Attachment B.

6.2 Employee Notification

Notifications of all personal sampling results will be shared with the affected employee within fifteen days of receipt of analytical results. Notification contents will include date of sampling, task(s) employee was performing, material(s) sampled, applicable exposure limits, results of sampling and any specific regulatory requirements. Communication with affected employees will be by notification from the employee's supervisor and a letter in the mail. Management will be notified of monitoring results via electronic means. Chad Dodson and Matt Kovach, in consultation with Ricky Belk, will formulate appropriate changes to working processes and or increasing personal protective equipment based on monitoring results.

7.0 Points of Contact

The points of contact for this project are:

Heritage Environmental Services, LLC
Ricky Belk, Director
1840 N 105th E Ave
Tulsa, OK 74116
P: (918) 627-2671
ricky.belk@heritage-enviro.com

Heritage Environmental Services, LLC
Matt Kovach, CSP
Corporate Health and Safety Systems Leader
P: 317-675-9980
mkovach@heritage-enviro.com

ATTACHMENT A OSHA AL, PEL and IDLH Values

Contaminant	AL	PEL	IDLH	Primary Route of Entry	Symptoms	Target Organs
Cadmium	2.5 ug/m^3	5.0 ug/m^3	9 mg/m^3	Inhalation	Pulmonary edema and chemical pneumonitis develop, leading to death due to respiratory failure	Liver and kidneys
Chromium	2.5 ug/m^3	5.0 ug/m^3	9 mg/m^3	Inhalation	Runny nose, sneezing, coughing, itching and a burning sensation.	Respiratory tract
Lead	30 ug/m^3	50 ug/m^3	100 mg/m^3	Inhalation	Joint muscle pain, difficulties with memory or concentration, headache, mood disorders	Kidneys, immune system, reproductive system, and liver

OSHA AL – Action Level

OSHA PEL – Permissible Exposure Limit

OSHA IDLH – Immediately Dangerous to Life and Health

ATTACHMENT B – Gilian Air Sampling Reports/Methods

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GilAir PLUS

Air Sampling Pump Report

User Description

Worker Name:	Chad Dodson	Company:	Heritage Environmental Services
Worker ID:	JD33221	Facility ID:	Fort Smith, AR
Work Shift:	Day	Department:	HIS
		Location:	Fort Smith

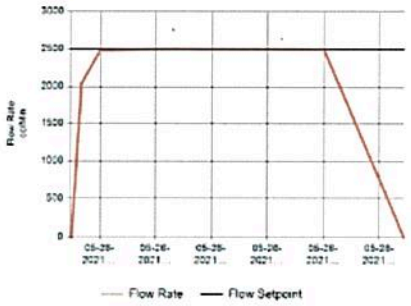
Description of Work:
Handleing and dispensing of 55-gallon drums and flexible intermediate bulk containers containing spent shot blast meterial.

Notes:
2 minute run time

GilAir Plus Sampling Data

Pump Serial Number:	20210430067
Start Date and Time:	5/26/2021 8:37:44 PM
Stop Date and Time:	5/26/2021 8:42:40 PM
Run time:	0 days 00:04
Set Flow Rate:	2500 cc/min
Sampled Volume:	10.2 L
Control Mode:	Constant Flow
Calibrator:	Gilibrator-3
Calibrator Serial Number:	Cell 0709023-S
Motion Activity:	0 Active / 0 Stationary / 0 Inactive

Runtime Graph:



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Industrial Health & Safety Instrumentation

GilAir PLUS

Concentration Results

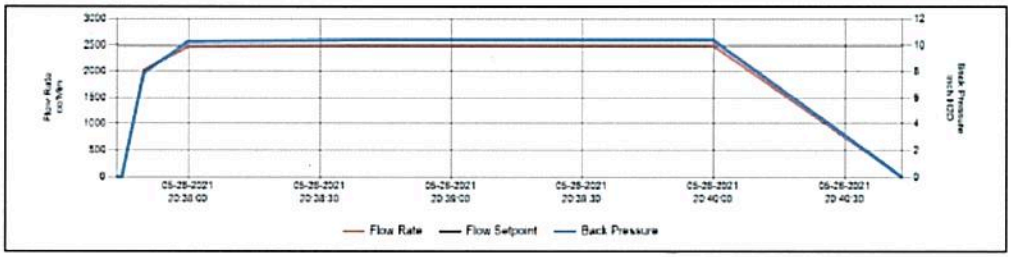
Control Mode: Constant Flow

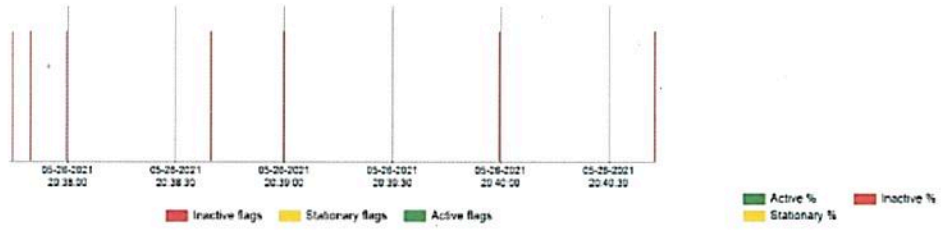
	Sample 1	Sample 2	Sample 3	Sample 4
Target Substance	Cadmium	Chromium, Hexavalent	Lead	
Molecular Mass	112	0	0	0
Sample Method	NIOSH 7300			
Sample Media	MCE Filter			
PreCal Flow Rate	2500 cc/min	2500 cc/min	2500 cc/min	2500 cc/min
PostCal Flow Rate	2500 cc/min	2500 cc/min	2500 cc/min	2500 cc/min
Sampled Volume	10.2 L	10.2 L	10.2 L	10.2 L
Lab Results	3.456 mg	0	0	0
Auto Concentration	340.12400 mg/m³	--	--	--
User Concentration	--			

Temperature Avg: 70 °F
Barometric Pressure Avg: 733 mmHg

Laboratory Name: SGS Galson
Date Sample Sent to Lab: --
Date Results Received: --

Runtime Graph:





Gilibrator 3 Calibration Report

Date and Time of Calibration	05/26/2021 20:38
Date Format	MMDDYYYY
Pump Model Number	GIL AIR PLUS
Pump Serial Number	067
User Name	MK
Sample Identifier	067 PRE CAL
Calibrator Serial Number	21191001001
Calibrator Last Calibration Date	05/06/2021
Flow Cell Model	Dry Std
Flow Cell Serial	21171011014
Flow Cell Last Calibration Date	05/12/2021
Cell Average Pressure	393.1
Pressure Unit of Measure	in/H2O
Cell Average Temperature	72.8
Temperature Unit of Measure	Fahrenheit
Volumetric Flow Average	2457
Flow Unit of Measure	cc/min
Number of Samples Taken	10
Standard Deviation (2sigma)	6.8652
Percent Deviation (% 2sigma)	0.28
Percent Deviation Threshold (%)	2.50
STP Reference Temperature	77.0
STP Reference Pressure	406.8
STP Flow Average	2393

Reading cc/min

1: 2457	6: 2458
2: 2454	7: 2455
3: 2450	8: 2462
4: 2458	9: 2461
5: 2461	10: 2455

Gilibrator 3 Calibration Report

Date and Time of Calibration	05/26/2021 20:44
Date Format	MMDDYYYY
Pump Model Number	GIL AIR PLUS
Pump Serial Number	067
User Name	MK
Sample Identifier	067 POST CAL
Calibrator Serial Number	21191001001
Calibrator Last Calibration Date	05/06/2021
Flow Cell Model	Dry Std
Flow Cell Serial	21171011014
Flow Cell Last Calibration Date	05/12/2021
Cell Average Pressure	392.8
Pressure Unit of Measure	in/H2O
Cell Average Temperature	72.7
Temperature Unit of Measure	Fahrenheit
Volumetric Flow Average	2457
Flow Unit of Measure	cc/min
Number of Samples Taken	10
Standard Deviation (2sigma)	7.3692
Percent Deviation (% 2sigma)	0.30
Percent Deviation Threshold (%)	2.50
STP Reference Temperature	77.0
STP Reference Pressure	406.8
STP Flow Average	2391

Reading cc/min

1: 2459	6: 2457
2: 2460	7: 2464
3: 2456	8: 2455
4: 2459	9: 2453
5: 2455	10: 2450

SENSIDYNE®
Industrial Health & Safety Instrumentation

GilAir PLUS

Innovation Delivered

Performance, versatility, superior design, and result validation

Download the CONNECT™ Mobile App on your iOS or Android* smart phone/tablet for a full set of mobile features that assure data integrity!

Easily Monitor Activity with Your Mobile Device!

Quickly set up a mobile device for remote (via Bluetooth) internal motion monitoring, logging that provides improved sample integrity, in-process sample auditing, snapshots, and automatic reports of current conditions. Complete instructions are included with the GilAir® Plus.

Bluetooth™

Sample data, as well as motion monitoring is available via Bluetooth connection to Android and iOS devices running Gilian CONNECT Mobile.*

QuadMode℠ Air Sampling Technology

Wide, dynamic flow range provides high-flow constant pressure and constant flow, and low-flow constant pressure and constant flow without external adapters.

Selectable Automatic Fault Recovery

GilAir® Plus pump automatically attempts restart to recover from temporary fault conditions. The selectable automatic fault recovery feature provides restart in the event the sample tubing becomes crimped or briefly blocked. This feature attempts to restart the pump up to 10 times every 3 minutes to check if the block is cleared. Fault time is not added to the accumulated and displayed sample runtime. Automatic fault recovery can be disabled if desired.

SmartCal℠ Automatic Calibration

The SmartCal feature uses the dock as a communication link between appropriate calibration devices and the GilAir® Plus. It automates calibration and records pre and post sample calibrations in the pump's datalog.

Superior Design & Advanced Data Handling

GilAir® Plus is light-weight, quiet, with a large backlit display. An optional computer interface allows uploading program information or downloading time-stamped datalogs through the docking station. An intuitive menu and keypad interface make it easy for users to make adjustments or change settings on the pump using a lockable keypad to prevent tampering once the pump is set for use.

High Back Pressure Capability

GilAir® Plus delivers the reliable performance users expect from the Gilian brand. The pump has high back-pressure capability of up to 40" H_2O in high-flow and also up to 40" H_2O in low flow. An automatic self check system ensures sample accuracy by continuously monitoring pump performance and components.

Temperature & Pressure Compensation

The GilAir® Plus pump operates in selectable ambient or standard mode correcting for temperature and barometric pressure when equipped with STP option and provides automatic flow correction option for barometric pressure changes.

* A current list of iOS and Android devices can be found at www.sensidyne.com on the GilAir Plus product page.

GilAir PLUS

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Docking Provides Charging & Communication Functions

GilAir® Plus docks provide charging and communication functions (Datalog and STP models) for the pump. Once docked, the Gilian CONNECT PC application allows users to review datalogs, generate sampling reports, manage sampling programs, and create pump set-up profiles that expedite deployment of large pump fleets and management of sample records.

Three and five-station docks are included when ordering multi-pump configurations.

GilAir Plus Pumps

	Pump Only			
	Basic Model	810-0901-01-R	810-0901-01-R	810-0901-01-R
	Data-logging Model	810-0902-01-R	810-0902-01-R	810-0902-01-R
New!	BT Data-logging Model	810-0902-02-R	810-0902-02-R	810-0902-02-R
	STP Model	810-0903-01-R	810-0903-01-R	810-0903-01-R
New!	BT STP Model	810-0903-02-R	810-0903-02-R	810-0903-02-R
	Single Unit Starter Kit	**US PLUG**	**EURO PLUG**	**UK PLUG**
	Basic Model	910-0901-US-R	910-0901-EU-R	910-0901-UK-R
	Data-logging Model	910-0902-US-R	910-0902-EU-R	910-0902-UK-R
New!	BT Data-logging Model	910-0910-US-R	910-0910-EU-R	910-0910-UK-R
	STP Model	910-0903-US-R	910-0903-EU-R	910-0903-UK-R
New!	BT STP Model	910-0911-US-R	910-0911-EU-R	910-0915-UK-R
	Three Unit Starter Kit	**US PLUG**	**EURO PLUG**	**UK PLUG**
	Basic Model	910-0907-US-R	910-0907-EU-R	910-0907-UK-R
	Data-logging Model	910-0908-US-R	910-0908-EU-R	910-0908-UK-R
New!	BT Data-logging Model	910-0914-US-R	910-0914-EU-R	910-0914-UK-R
	STP Model	910-0909-US-R	910-0909-EU-R	910-0909-UK-R
New!	BT STP Model	910-0915-US-R	910-0915-EU-R	910-0915-UK-R
	Five Unit Starter Kit	**US PLUG**	**EURO PLUG**	**UK PLUG**
	Basic Model	910-0904-US-R	910-0904-EU-R	910-0904-UK-R
	Data-logging Model	910-0905-US-R	910-0905-EU-R	910-0905-UK-R
New!	BT Data-logging Model	910-0912-US-R	910-0912-EU-R	910-0912-UK-R
	STP Model	910-0906-US-R	910-0906-EU-R	910-0906-UK-R

Product Specifications

PERFORMANCE

Flow Range	Constant flow 20 - 5,000 cc/min. without external adaptors Constant pressure 1 - 5,000 cc/min without external adaptors
Flow Modes	Constant Flow or High and Low Flow Constant Pressure
Accuracy	
Flow Display	± 5% or 3 cc/min of set flow, whichever is larger
Constant Flow Control	± 5% or 3 cc/min of set flow, whichever is larger
Constant Pressure Control	± 10% of back-pressure
Barometric Pressure	± 5% of calibrated flow from 460 to 1060 mmHg (*STP Model Only*) in high flow ranges
Back Pressure Capability (8-hour runtime)	5000 cc/min. up to 12" H20 back pressure 4000 cc/min. up to 20" H20 back pressure 3000 cc/min. up to 30" H20 back pressure 2000 cc/min. up to 30" H20 back pressure 1000 cc/min. up to 35" H20 back pressure 20 - 999 cc/min. up to 40"" H20 back pressure
Run Time	8 hour minimum with back pressures up to max specified capability. Continuous sampling from dock.
Flow Fault	If flow changes exceed 5% within back pressure specifications, fault notification appears. If fault exceeds 30 seconds, pump shuts down. Selectable automatic fault recovery allows the pump to attempt restart every 3 minutes for up to 10 times or to hold until manual intervention

ENVIRONMENTAL

Temperature Ranges	
Operating	32°F to 113°F (0°C to 45°C)
Storage	-4°F to 113°F (-20°C to 45°C)
Charging	41°F to 104°F (5°C to 40°C)
Humidity Ranges	
Operating	5-95 %RH, non-condensing
Storage	5-98 %RH, non-condensing

GENERAL

Display	Flow rate, sample time, and sample volume in actual conditions
Controls	
Indicators	Green and Red LED's
Dimensions	4.3 x 2.4 x 2.4 inches (10.9 x 6.1 x 6.1 centimeters)
Weight	20.5 ounce (581 grams)
Warranty	2 years for pump, 5 years for pump keypad, and 1 year on rechargeable NiMH battery pack, lifetime warranty on belt clip

ELECTRICAL

Power Options	Removable rechargeable nickel-metal hydride (NiMH) battery pack, optional alkaline battery pack, or DC power
Battery Level Indicator	On-screen icon displays battery level
Interface Connectors	All pump interface is carried out via the Dock or keypad
Dock Functions	Battery charging, computer interface, and auto-calibration
Charging Time	Under 3.5 hours

APPROVALS

EN 1232 Compliant	Ingress Protection: IP54
ISO 13137 Compliant	
Intrinsic Safety	
US/Canada NRTL (FM)	Class I, Div 1 Groups A, B, C, D, E, F, and G; Class II, Div 1 Zone 0; Class III, T4
ATEX	Ⓔ II 1 G Ex ia IIC T4
CE	
Applicable Directives	ATEX 94/9/EC EMC 2004/108/EC (RFI) | LVD 2006/95/EC | RoHS Compliant

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Tel: 800-451-9444 / +1 727-530-3602 | E-mail: info@Sensidyne.com | Web: www.Sensidyne.com

ELEMENTS by ICP (Hot Block/HCl/HNO_3 Digestion) 7303

MW: Table 1 CAS: Table 2 RTECS: Table 2

METHOD: 7303, Issue 1 **EVALUATION: PARTIAL** **Issue 1: 15 March 2003**

OSHA: Table 2
NIOSH: Table 2
ACGIH: Table 2

PROPERTIES: Table 1

ELEMENTS:

aluminum	cadmium	indium	nickel	strontium	zinc
antimony*	calcium	iron	palladium	tellurium	
arsenic	chromium	lead*	phosphorus	thallium	
barium	cobalt	magnesium	platinum	tin*	
beryllium	copper	manganese	potassium	titanium	
bismuth*	gallium	molybdenum	selenium	vanadium	
boron	gold	neodymium	sodium	yttrium	

* With certain restrictions (see Table 3)

SAMPLING

SAMPLER: FILTER (0.8-µm, cellulose ester membrane)

FLOW RATE: 1 to 4 L/min

VOL-MIN: Table 1
-MAX: Table 1

SHIPMENT: Routine

SAMPLE STABILITY: Stable

BLANKS: 2 to 10 field blanks per set

ACCURACY

RANGE STUDIED: 5,000 to 50,000 µg/sample

BIAS: Not determined

OVERALL PRECISION: Not determined

ACCURACY: Not determined

MEASUREMENT

TECHNIQUE: INDUCTIVELY COUPLED ARGON PLASMA, ATOMIC EMISSION SPECTROSCOPY

ANALYTE: See element list above

REAGENTS: Conc. HCl, 1.25 mL; and conc. HNO_3, 1.25 mL

FINAL SOLUTION: 5% HCl and 5% HNO_3, 25 mL

WAVELENGTH: Element and instrument specific

BACKGROUND CORRECTION: Spectral wavelength shift

CALIBRATION: Elements in 5% HCl, 5% HNO_3

RANGE: LOQ to 50,000 µg/sample [1]

ESTIMATED LOD: Varies with element; Table 1

PRECISION (Ŝ): Not evaluated

APPLICABILITY: The working range of this method is up to 100 mg/m³ for each element in a 500-L sample (the minimum range depends on the LOD for each sample; see Table 1). The analysis is not compound specific. Certain elemental compounds are known to be acceptable or unacceptable by this method (see Table 3). For unverified compounds, a test run should be conducted using a known amount of the compound in question to determine acceptability.

INTERFERENCES: Interferences are spectral in nature and are accounted for by choosing appropriate wavelengths, applying interelement correction factors, and background correction.

OTHER METHODS: Alternative, more sensitive methods exist for some elements by graphite furnace atomic absorption spectroscopy. This method is similar to NIOSH Method 7301, differing only in the use of the hot block for digestion of the sampler.

REAGENTS:

1. Hydrochloric acid,* conc., ultra pure.
2. Nitric acid,* conc., ultra pure.
3. Calibration stock solutions, 50-1000 µg/mL. Commercially available single element solutions or multielement solutions prepared as instructed by the instrument manufacturer.
4. Argon, prepurified.
5. Distilled, deionized, Type II water.
6. Diluting solution: 5% HCl : 5% HNO_3. To about 600 mL of deionized water in a 1-L volumetric flask, slowly add 50 mL conc. HCl and 50 mL conc. HNO3. Dilute to the mark with deionized water.

* See SPECIAL PRECAUTIONS

EQUIPMENT:

1. Sampler: cellulose ester membrane filter, 0.8-µm pore size, 37-mm diameter; in cassette filter holder.
2. Personal sampling pump, 1 to 4 L/min, with flexible connecting tubing.
3. Inductively coupled argon plasma-atomic emission spectrometer, equipped as specified by the manufacturer for analysis of elements of interest.
4. Hot block apparatus at 95 °C.
5. Digestion vessels and caps, 50-mL.
6. Watchglasses.
7. Pipettes, electronic and mechanical.
8. Regulator, two-stage, for argon.
9. Forceps.

SPECIAL PRECAUTIONS: Concentrated acids are powerful oxidizers, toxic, and corrosive liquids. Wear protective clothing and work in a fume hood.

SAMPLING:

1. Calibrate each personal sampling pump with a representative sampler in line.
2. Sample at an accurately known flow rate between 1 and 4 L/min for a total sample size of 200 to 2000 L for TWA measurements. Do not exceed a filter loading of approximately 2 mg total dust.

SAMPLE PREPARATION:

3. Open the cassette filter holder and with forceps remove the sample filter. Fold the filter into quarters taking care not to lose any sample, and transfer to a clean, 50-mL hot block digestion tube.
4. Add 1.25 mL HCl. Cover with a plastic watchglass. Place in the hot block and heat at an internal temperature of 95 °C for 15 minutes.
   NOTE: The internal temperature may vary from the digital readout. Calibrate the hot block prior to digestion.
5. Remove the sample from the hot block and cool for 5 minutes. Remove watchglass and add 1.25 mL HNO_3. Replace watchglass and return to hot block at 95 °C for 15 minutes.
6. Remove the sample from the hot block and cool for at least 5 minutes. Rinse watchglass into the sample container and discard watchglass.
7. Dilute to 25-mL final volume with distilled, deionized Type II water.

CALIBRATION AND QUALITY CONTROL:

8. Calibrate the spectrometer according to the manufacturer's recommendations. Use standards consisting of the same 5% HCl : 5% HNO_3 matrix as the samples.
9. Analyze a standard every 10 samples.
10. Analyze a media blank every 20 samples, and a reagent blank every 10 samples.
11. Analyze a set of two laboratory control samples every 40 samples of a given matrix for a given analyte.
12. Check recoveries with at least two spiked media blanks per ten samples.
    NOTE: In the determination of lead, there may be a measurement interference (for example, samples with high aluminum levels). More recent instruments have a correction for this.

MEASUREMENT:

13. Set spectrometer to conditions specified by manufacturer.
14. Analyze standards, samples and quality control checks.
    NOTE: If the elemental value for a sample is above the linear range of the element(s) in question, dilute the sample solution with 5% HCl : 5% HNO_3 diluting solution, reanalyze and apply the appropriate dilution factor in the calculations.

CALCULATIONS:

15. Obtain the solution concentrations for the sample, C_s (µg/mL), and the average media blank, C_b (µg/mL), from the instrument.
16. Using the solution volumes of sample, V_s (mL), and media blank, V_b (mL), calculate the concentration, C (mg/m^3), of each element in the air volume sampled, V (L):

$$C = \frac{C_s V_s - C_b V_b}{V}, mg/m^3$$

NOTE: µg/L = mg/m^3

EVALUATION OF METHOD:

The method was evaluated for all elements and compounds listed in Table 1 and Table 2 between 1999 and 2001 using known amounts of bulk material [4]. Evaluation is ongoing for additional elements and compounds. The limits of detection and quantitation were also determined for each element. Two ICP instruments were used in the evaluation, a Thermal Jarrell Ash Model 61E [5] and a TJA IRIS [6], operated according to the manufacturer's instructions.

REFERENCES:

[1] WOHL [2001]. Metals validation using hot block digestion, Unpublished data. Wisconsin Occupational Health Laboratory, Madison, WI.
[2] NIOSH [1994]. Method 7300: Elements by ICP, NIOSH Manual of Analytical Methods, Fourth Edition, Issue 2, Aug. 15, 1994.
[3] WOHL [2001]. Metals Manual 2001, WOHL Internal Document, Updated Apr. 1, 2001. Wisconsin Occupational Health Laboratory, Madison, WI.
[4] WOHL [2001]. WOHL General Operations Procedures Manual, WOHL Internal Document, Updated 2001. Wisconsin Occupational Health Laboratory, Madison, WI.
[5] Thermal Jarrell Ash [1991]. ICAP 61E Plasma Spectrometer Operator's Manual, Thermal Jarrell Ash Corp., Part No. 128832-01, Feb., 1991.
[6] Thermal Jarrell Ash [1997]. IRIS Plasma Spectrometer User's Guide, Thermal Jarrell Ash Corp., Part No. 135811-0, Feb. 4, 1997.

METHOD WRITTEN BY:

Jason Loughrin, Lyle Reichmann, Doug Smieja, Shakker Amer, Curtis Hedman
Wisconsin Occupational Health Laboratory (WOHL).

TABLE 1: ANALYTE INFORMATION FOR VALID ELEMENTS AND COMPOUNDS

Analyte	Properties		LOD (µg/mL)	LOQ (µg/mL)	Estimated LOQ (µg/sample)*	Minimum** air vol. (L)	Maximum*** air vol. (L)
	MW	MP (°C)					
Al	26.98	660	0.111	0.37	9.25	2	10,000
As	74.92	817	0.009	0.03	0.075	8	5,000,000
Au	196.97	10.63	0.015	0.05	1.25	1	3,300
B	10.81	2177	0.0094	0.0283	0.71	1	3,300
Ba	137.34	3.51	0.0018	0.006	0.15	1	100,000
Be	9.01	2178	0.00075	0.0025	0.062	35	25,000,00
Bi	208.98	271	0.025	0.085	2.12	1	10,000
Ca	40.08	842	0.099	0.33	8.25	2	10,000
CaO	56.08	2927	0.139	0.462	11.6	3	10,000
Cd	112.4	321	0.0037	0.012	0.30	3	500,000
Co	58.93	1495	0.003	0.011	0.27	3	500,000
Cr	52.00	1890	0.009	0.03	0.75	8	500,000
Cu	63.54	1083	0.020	0.060	1.50	15	500,000
Fe	55.85	1535	0.070	0.20	5.00	1	5,000
Fe_2O_3 (as Fe)	159.69	1462	0.070	0.20	5.00	1	5,000
Ga	69.72	29.75	0.03	0.09	2.25	1	3,300
In	114.82	156.3	0.015	0.05	1.25	15	500,000
Mg	24.31	651	0.047	0.14	3.50	1	10,000
MgO	40.32	2825	0.078	0.23	5.75	5	33,000
Mn	54.94	1244	0.0012	0.004	0.10	0.05	10,000
Mo	95.94	651	0.0072	0.024	0.60	0.5	10,000
Nd	92.906	2477	0.01	0.03	0.75	0.1	3,300
Ni	58.71	1453	0.012	0.039	0.98	1	50,000
P	30.97	44	0.3	1.0	25	250	500,000
Pb	207.19	328	0.023	0.07	1.75	35	100,000
Pd	106.4	1550	0.009	0.03	0.75	0.1	3,300
Pt	195.09	1769	0.0045	0.015	0.38	200	25,000,000
Sb	121.75	630.5	0.018	0.06	1.50	3	100,000
Se	78.96	217	0.021	0.064	1.60	8	250,000
Sn	118.69	232	0.015	0.05	1.25	1	25,000
Sr	87.62	769	0.002	0.006	0.15	300	100,000,000
Te	127.60	450	0.15	0.5	12.5	125	500,000
Ti	47.90	1675	0.005	0.016	0.40	0.1	10,000
Tl	204.37	304	0.044	0.133	3.32	35	500,000
V	50.94	1890	0.003	0.01	0.25	2.5	500,000
Y	88.91	1495	0.001	0.003	0.075	0.1	50,000
Zn	65.37	419	0.022	0.066	1.65	0.5	10,000
ZnO	81.37	1970	0.027	0.082	2.05	0.5	10,000

* Value based on a 25-mL sample volume.

** The minimum sampling volume needed to obtain the OSHA PEL at the LOQ for the element/compound at a sample digestion volume of 25 mL.

*** The maximum sampling volume for a given sample, calculated by taking 50,000 µg as the limit for the element/compound per sample.

NOTE: The LOD and LOQ values are dependent on the particular analytical instrument used. Also, LOD and LOQ values may vary for a particular element due to certain interelement interferences.

TABLE 2. EXPOSURE LIMITS, CAS #, RTECS

Element (Symbol)	CAS #	RTECS	Exposure Limits, mg/m³ (Ca = carcinogen) OSHA	NIOSH	ACGIH
Silver (Ag)	7440-22-4	VW3500000	0.01 (dust, fume, metal)	0.01 (metal, soluble)	0.1 (metal) 0.01 (soluble)
Aluminum (Al)	7429-90-5	BD0330000	15 (total dust) 5 (respirable)	10 (total dust) 5 (respirable fume) 2 (salts, alkyls)	10 (dust) 5 (powders, fume) 2 (salts, alkyls)
Arsenic (As)	7440-38-2	CG0525000	varies	C 0.002, Ca	0.01, Ca
Barium (Ba)	7440-39-3	CQ8370000	0.5	0.5	0.5
Beryllium (Be)	7440-41-7	DS1750000	0.002, C 0.005	0.0005, Ca	0.002, Ca
Calcium (Ca)	7440-70-2	–	varies	varies	varies
Cadmium (Cd)	7440-43-9	EU9800000	0.005	lowest feasible, Ca	0.01 (total), Ca 0.002 (respir.), Ca
Cobalt (Co)	7440-48-4	GF8750000	0.1	0.05 (dust, fume)	0.02 (dust, fume)
Chromium (Cr)	7440-47-3	GB4200000	0.5	0.5	0.5
Copper (Cu)	7440-50-8	GL5325000	1 (dust, mists) 0.1 (fume)	1 (dust) 0.1 (fume)	1 (dust, mists) 0.2 (fume)
Iron (Fe)	7439-89-6	NO4565500	10 (dust, fume)	5 (dust, fume)	5 (fume)
Potassium (K)	7440-09-7	TS6460000	--	--	--
Lanthanum	7439-91-0	--	–	–	–
Lithium (Li)	7439-93-2	--	–	–	–
Magnesium (Mg)	7439-95-4	OM2100000	15 (dust) as oxide 5 (respirable)	10 (fume) as oxide	10 (fume) as oxide
Manganese (Mn)	7439-96-5	OO9275000	C 5	1; STEL 3	5 (dust) 1; STEL 3 (fume)
Molybdenum (Mo)	7439-98-7	QA4680000	5 (soluble) 15 (total insoluble)	5 (soluble) 10 (insoluble)	5 (soluble) 10 (insoluble)
Nickel (Ni)	7440-02-0	QR5950000	1	0.015, Ca	0.1 (soluble) 1 (insoluble, metal)
Phosphorus (P)	7723-14-0	TH3500000	0.1	0.1	0.1
Lead (Pb)	7439-92-1	OF7525000	0.05	0.05	0.05
Antimony (Sb)	7440-36-0	CC4025000	0.5	0.5	0.5
Selenium (Se)	7782-49-2	VS7700000	0.2	0.2	0.2
Tin (Sn)	7440-31-5	XP7320000	2	2	2
Strontium (Sr)	7440-24-6	–	–	–	–
Tellurium (Te)	13494-80-9	WY2625000	0.1	0.1	0.1
Titanium (Ti)	7440-32-6	XR1700000	–	–	--
Thallium (Tl)	7440-28-0	XG3425000	0.1 (skin) (soluble)	0.1 (skin) (soluble)	0.1 (skin)
Vanadium (V)	7440-62-2	YW240000	--	C 0.05	--
Tungsten	7440-33-7	–	5	5 10 (STEL)	5 10 (STEL)
Yttrium (Y)	7440-65-5	ZG2980000	1	N/A	1
Zinc (Zn)	7440-66-6	ZG8600000	–	–	–
Zirconium (Zr)	7440-67-7	ZH7070000	5	5, STEL 10	5, STEL 10

NIOSH Manual of Analytical Methods (NMAM), Fourth Edition

TABLE 3: VALIDATION SUMMARY

Analyte	Status[1]	Analyte	Status	Analyte	Status
Ag	Not Valid	CuO	Valid	S	Not Valid
Al	Valid	Fe	Valid	Sb	Partially Valid[4]
Al_2O_3	Not Valid	Fe_2O_3	Valid	Sb_2O_3	Partially Valid[5]
As	Valid	Ga	Valid	Se	Valid
Au	Valid	In	Valid	Si	Not Valid
B	Valid	KCl	Pending	Sn	Partially Valid[6]
Ba	Pending	Mg	Valid	SnO	Pending
BaO	Pending	MgO	Valid	SnO_2	Pending
BaO_2	Pending	Mn	Valid	Sr	Valid
$BaCl_2$	Valid	MnO	Valid	$SrCrO_4$	Valid (by Cr)
$BaSO_4$	Pending	Mo	Valid	Te	Valid
Be	Valid	NaCl	Pending	Ti	Valid
Bi	Partially Valid[2]	Nd	Valid	Tl	Valid
Ca	Valid	Ni	Valid	V	Valid
$CaCO_3$	Valid	P	Valid	V_2O_5	Valid
CaO	Valid	Pb	Partially Valid[3]	Y	Valid
Cd	Valid	$PbCrO_4$	Valid (by Cr)	Zn	Valid
Co	Valid	PbO	Valid	ZnO	Valid
Cr	Valid	Pd	Valid	Zr	Not Valid
Cu	Valid	Pt	Valid	ZrO	Not Valid

[1] Status definitions

Valid: The method is suitable for samples up to at least 0.0500 g bulk material with recoveries of between 90 and 110 percent. This weight exceeds most expected levels encountered in work environments.

Partially Valid: The method is suitable with bulk-material recoveries of between 90 and 110 percent under certain conditions (as footnoted above).

Not Valid: The method procedure is not suitable for samples at any weight with recoveries of between 90 and 110 percent. An alternative method should be used.

[2] Valid up to 10,000 µg/sample and within 7 days of sample digestion.
[3] Valid up to 50,000 µg/sample and at least 24 hours after sample digestion; Valid up to 15,000 µg/sample within 24 hours of sample digestion.
[4] Valid up to 25,000 µg/sample and within 7 days of sample digestion.
[5] Valid up to 25,000 µg/sample and within 7 days of sample digestion.
[6] Valid up to 30,000 µg/sample and within 7 days of sample digestion.

NOTE: The upper limits of the method can be extended by serial dilution of the samples at the time of analyses.

ATTACHMENT C
TRANSPORTATION MANAGEMENT PLAN

REMOVAL ACTION WORK PLAN
US TECHNOLOGY WAREHOUSE
FT. SMITH AR

US ENVIRONMENTAL PROTECTION AGENCY REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TX 75270

JUNE 2021

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 TELECOM DRIVE, SUITE 400
INDIANAPOLIS, INDIANA 46278

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LIST OF FIGURES

1 INTRODUCTION

This Removal Action Work Plan ("RAWP") has been prepared for a hazardous waste removal action ("Removal Action") at property known as the US Technology Corporation ("UST") facility, located at 6500 Grand Avenue, Fort Smith, Arkansas ("Site"). This Transportation Plan provides a guide for the procedures and logistics for safe and compliant transportation of hazardous waste from the Site.

The Site is located in Sebastian County Arkansas on the east side of Fort Smith and lies between Interstate 540 and the western bank of the Arkansas River to the east (Figure 1). The Site is at the far eastern end of Grand Avenue and the entrance ramp for Interstate 540 lies only 0.8-mile west of the site.

This short distance to a major transportation route and the fact the Grand Avenue dead ends at the Site, lends this Site to a simple ingress/egress pattern. The Site is a short distance to Interstate 540 and traffic associated with transportation of waste from the Site to the Interstate is expected to have minor impact to the community.

The purpose of this Transportation Management Plan ("TMP") is to coordinate and control traffic congestion issues that could cause delays in the efficient implementation of the project or adversely affect the surrounding area. The TMP and the RAWP will specify areas during the initial site planning stages for entering, leaving, or staging equipment around the Site making traffic flow appropriate for the surrounding area and limit disruption.

Transportation activities will be conducted in accordance with Ft. Smith and Arkansas Department of Transportation (ADOT) regulations.

The specific removal activities are the transportation of characteristically hazardous waste, known as Spent Blast Media ("SBM") which is contained in drums and supersacks at the Site.

1.1 Plan Organization

This TMP is organized into the following sections:

Section 1 – Introduction provides an overview and background of the project and describes the purpose and objectives.
Section 2 – Waste Transportation, Handling and Management -- details the specific protocols to load and transport waste materials during the RAWP implementation.
Section 3 – Staging and Transportation -- details designated staging and loading zones as well as routes traffic entering and leaving the Site.

Contractors and personnel accessing the Site will comply with this TMP. Implementation of the TMP will be carried out by Heritage.

The TMP is dynamic in nature and it establishes procedures and that will be used to manage traffic associated with the removal activities. As a dynamic document, the TMP may be revised as Site conditions change or if it is requested by the US EPA or local government authorities.

1.2 Transportation Management Plan Objectives

The purpose of this TMP is to coordinate the safe, compliant, and efficient control of traffic involving waste disposal trucks, and equipment and staff involved with the RAWP.

The transportation route for the Site is restricted to one street – Grand Avenue to the on-ramp to Interstate 540 and waste transport vehicles involved with the RAWP will use this route.

2 WASTE TRANSPORTION, HANDLING AND MANAGEMENT

Various tasks will be performed prior to implantation of the RAWP and include:

- Waste Profile
- Requirement for Transporters
- Traffic Control Procedures
- Material Handling-Truck Loading Operations
- Shipment Documentation
- Off-Site Disposal Facility

2.1 Waste Profile

The USEPA has determined that the materials at the Site include characteristically hazardous waste carrying the following codes D006 (Cadmium), D007 (Chromium), and D008 (Lead). A Standard Uniform Hazardous Waste Manifest will be used for all tracking. The USEPA has also determined that the waste is adequately characterized and no additional waste analysis is required for disposal.

2.2 Requirement for Transporters

Transportation vehicles and operators will be required to observe all local and federal Department of Transportation (DOT) requirements. Shipping papers, including a manifest for each load and any other required shipping papers will be provided to all drivers.

All transportation vehicles will be appropriately labeled and placarded. Each load will be transported to Elemental Environmental Solutions LLC (EES) (ARD006354161) located at 500 East Reynolds Road, Arkadelphia, AR 71923 for stabilization and disposal.

Transportation of the SBM will be provided by Heritage Transport, or approved subcontractors, (Heritage IND058484114; Arkansas Permit H-0863).

2.3 Traffic Control Procedures

Due to the only available route of ingress/egress to the Site being Grand Avenue, the control of traffic will be via Grand Avenue. The access ramps to Interstate 540 are less than 1-mile from the Site.

2.4 Material Handling-Truck Loading Operations

The materials that will be placed into transportation vehicles will be handled on-site in designated loading areas established in the RAWP. After loading into appropriate transportation vehicles in the loading area, the load will be covered and paperwork checked before departing the Site.

2.5 Shipment Documentation

All shipments of hazardous waste will be tracked via Standard Uniform Hazardous Waste Manifests that are generated by the disposal facility. All manifests will be checked before departing the Site.

2.6 Off-Site Disposal Facility

The off-site disposal facility is Elemental Environmental Solutions LLC (EES) (ARD006354161), located at 500 East Reynolds Road, Arkadelphia, AR 71923.

3 STAGING AND TRANSPORATION ROUTES

The loadout of the SBM is planned to be conducted inside the warehouse facility as described in the RAWP. The end dump trailers will enter the warehouse depending on the arrangement of the loadout and the position of the SBM within the facility. Movement of some of the drums and supersacks may be necessary to provide adequate room for safe operation of equipment and end dump ingress/egress. As the project progresses, more room will become available within the warehouse.

The exact routes to the disposal facility will be as specified by the EES facility permit and any alternate routes that may be pre-established due to road construction.

The general facility location is provided on Figure 1 and Figure 2 is a Google Earth image showing the Site location, I-540, and general vicinity.

HERITAGE ENVIRONMENTAL SERVICES

Figure 1
US Technologies Warehouse
6500 Grand Ave. – Ft. Smith, AR
(USGS 7.5-minute quad, Van Buren AR)

Figure 2 – 6500 Grand Ave to I-540 Transportation Map

ATTACHMENT D – QUALIFICATONS AND TRAINING CERTIFICATES

REMOVAL ACTION WORK PLAN
US TECHNOLOGY WAREHOUSE
FT. SMITH AR

US ENVIRONMENTAL PROTECTION AGENCY REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TX 75270

JUNE 2021

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 TELECOM DRIVE, SUITE 400
INDIANAPOLIS, INDIANA 46278

HERITAGE ENVIRONMENTAL SERVICES SM

HERITAGE ENVIRONMENTAL SERVICES, LLC
6510 Telecom Dr.
Indianapolis, IN 46278
(317) 243-0811
www.heritage-enviro.com

Statement of Qualifications & Experience

January 2021

Table of Contents:

1.0 CORPORATE OVERVIEW

Heritage Environmental Services, LLC (Current name since 1998)

Corporate Headquarters: 7901 West Morris Street - Indianapolis, IN 46231 - Phone: 317/243-0811

Years in Business: 50 (was incorporated on March 6, 1970 in the State of Indiana.)

Nature of Business (SIC 4953 / NAICS 562211):

Full-service hazardous waste and byproduct management company including waste treatment, storage, disposal, field services, remediation, and transportation services.

General Financial Information:

Heritage Environmental Services, LLC is a privately held corporation. Heritage does not release financial reports and is not required to complete Form 10K. In special circumstances, certain financial information is released to customers after an Agreement of Confidentiality is executed.

- No significant judgments, claims, or suits pending or outstanding against Heritage
- No bankruptcy or reorganization proceedings currently or at any time in the past.

Aggregate Insurance Coverage Minimums (Certificate available upon request):

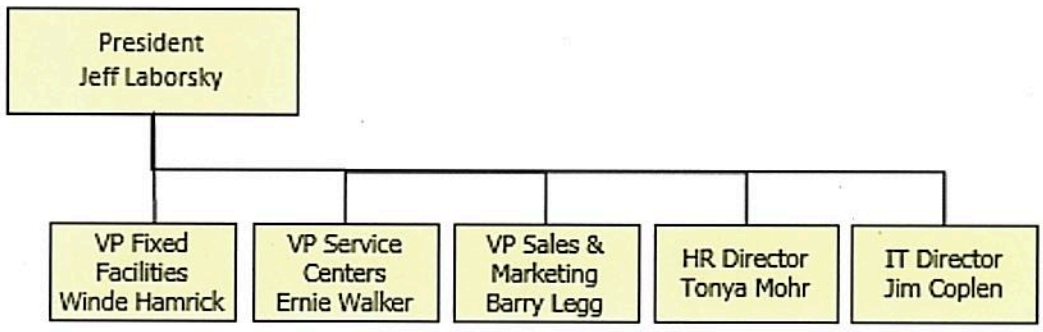
Pollution Legal Liability	$10 Million	Employers Liability	$1 Million
Professional Liability	$10 Million	Umbrella Coverage	$10 Million
Commercial Liability	$2 Million	Automotive Liability	$1MM/Accident

Tax Information:

Heritage Environmental Services, LLC	Federal Tax I.D. #35-1413237 (Duns #13-081-4528*)
Heritage Transport, LLC	Federal Tax I.D. #35-1573057 (Duns #13-081-4528*)

* Heritage does not provide information to Dun & Bradstreet and does not validate any information contained in their report.

Heritage Organizational Chart



The Heritage Group

The Heritage Group has been in business for more than 75 years. It now operates companies involved in petroleum refining and marketing, environmental services, highway construction, aggregates and asphalt refining. The Heritage Group pulls from the common interests, resources and diverse talents of the individual companies in a team approach to provide customers with innovative and effective solutions, using the capabilities and expertise gathered from years of successful business operations.

The synergy generated between companies has allowed the organization to be flexible, anticipate change and proactively respond to the needs of its customers. The collaboration between companies has been the catalyst for growth and expansion into new business areas. By pooling resources and technology, we are able to take a problem, explore its potential solution and make it work for the customer. Heritage customers benefit from the responsiveness of a small company and the technology and expertise of a large corporation.

The Heritage Group has always stood behind its products and results. We have a strong customer commitment and an absolute obligation to do things right. We foster long-term relationships and partnerships with our customers, to ensure that we can provide long-term service to those customers.

Heritage Environmental Services fulfills our commitments by:

- Creating a work environment that respects the importance of everyone's contribution to quality service. This is done by providing a safe work environment, requiring strict compliance with regulatory issues, and giving everyone recognition for their contribution to the company.
- Focusing on customer needs and satisfaction. Finding the type of service the customer wants, what constitutes good service, what is a fair price, and delivering it. Then improve and keep improving.
- Leading the market through research and innovation. Knowing and understanding all proposed regulatory actions affecting the client and preparing for them. Consistently scoring among the highest in facility and laboratory audits. Applying technology that allows the customer to operate consistently and in compliance.

Most important, Heritage is a leader for the customer. We share knowledge, help the customer solve compliance problems, build better treatment plants, and supply them with better tools and services to reduce their environmental costs and protect the environment.

Heritage Environmental Services, LLC (Heritage), is one of over twenty-five companies, which share common ownership through the Heritage Group. Founded in the 1930's, the Heritage Group is involved in such diverse industries as asphalt production, petroleum refining, gasoline marketing, mining, energy exploration and heavy highway construction. Headquartered in Indianapolis, Indiana, the Heritage Group employs over 3,000 people and maintains operations throughout the United States.

Heritage Environmental Group

In 1970, the Heritage Group entered into the industrial waste treatment business by forming Industrial Liquid Waste Disposal, in Bartholomew County, Indiana. This facility provided both oil reclamation and industrial waste disposal services. As this business grew, and treatment technologies developed, Industrial Liquid Waste Disposal was re-located to Indianapolis, Indiana and christened ILWD, Inc. At this location, the Heritage Group constructed a full-fledged hazardous waste treatment facility. Shortly after this relocation, ILWD constructed a Resource Conservation and Recovery Act, Subtitle "C" landfill in Putnam County, Indiana. This landfill was one of the first RCRA landfills in the United States to receive its Part B permit and remains in operation today.

In 1985, ILWD constructed an oil reclamation facility in Charlotte, North Carolina. Later facilities were added in Lemont, Illinois and Kansas City, Missouri, and Coolidge Arizona, and an Incinerator in East Liverpool Ohio. In 1987 ILWD, Inc. underwent a name change to Heritage Environmental Services.

While the waste treatment and disposal portions of Heritage were growing, other aspects of the environmental industry were also developing. After a three-year partnership, Heritage acquired Petrochem Services, Inc. and created the Heritage Remediation Division. Heritage now provides these services nationwide. Coupled with this growth, Heritage added services and expertise in the fields of Emergency Response, Research, Industrial Maintenance, Transportation and others.

Heritage has grown from a small oil recovery plant, to one of the largest privately held environmental firms in the United States. Like all successful companies, this growth can be attributed to many things. However, our mission statement has changed little, and we believe this still provides the guidelines for our success. Briefly, our mission is:

- Focus on the customer needs and deliver quality services
- Invest in research, innovation and improvement.
- Become a champion for the client; provide them with better tools and services to reduce their bottom line environmental costs.

Today, Heritage Environmental Services, LLC owns and operates:

- Five RCRA TSD facilities
- A hazardous/industrial waste trucking organization, Heritage Transport, Inc. (HTI)
- Field Services business
- On-site waste treatment operations at customer locations

Section 2 provides a brief synopsis on each of these services.

2.0 HERITAGE SERVICES AND FACILITIES

Heritage operations consist of three (3) waste treatment facilities, a RCRA incinerator, ten (10) remedial and emergency response centers, two (2) recycling centers, and a RCRA hazardous waste landfill. In addition to these fixed facilities, Heritage operates a number of treatment plants and on-site operations for clients throughout the United States. Heritage's Internet address is http://www.heritage-enviro.com. Below is a brief description of some of our services and capabilities.

2.1. Treatment and Disposal Group

Our TSD facilities handle a wide variety of industrial wastes, including:

- Waste acids, including HF/nitric, chromic, pickle liquors, and acid cleaning solutions
- Waste cyanide solutions and solids, including a potential cyanide destruction process
- Landfill leachates
- A wide variety of heavy metal wastes
- Wastewater treatment sludges, both pumpable liquids, semi-solids, solids, and filter cakes
- Hazardous dusts, including EAF dust and incinerator ash
- Supplemental fuel wastes, including oils, paints, inks, solvents, pastes, and greases
- Lab pack chemicals and HHW wastes
- Spill cleanup residues
- Soils contaminated with inorganics

Wastes are accepted in drums, bulk liquid, pneumatic tankers, roll-offs, dump trailers and by rail.

2.2. Indianapolis Waste Treatment and Recovery Plant

The Indianapolis facility is one of the largest privately operated commercial waste treatment facilities in the nation. This facility with a Federal Part "B" permit is fully licensed to accept, treat, and store hazardous waste. Hazardous liquid waste streams undergo a series of treatment steps to:

- Destroy cyanide
- Reduce hexavalent chrome
- Neutralize corrosives
- Precipitate metals
- Detoxify hazardous elements
- Remove solids

Solid and sludge fractions are separated by physical and chemical methods, and subsequently de-watered. These residual solids are stabilized to meet strict Land Disposal Restrictions (LDRs). The stabilized sludge cake is taken to the Heritage Part B - permitted RCRA landfill in Putnam County, Indiana. The Indianapolis facility also accepts non-hazardous wastestreams, spent solvent, hazardous oils, paints, and inks and has treatment capabilities for fuel blending to cement kilns.

Treated process water is stored in holding tanks, tested, and then discharged to the Indianapolis DPW tertiary treatment system, under the terms of a strict discharge permit. The Indianapolis plant is permitted to treat most F and K listed waste and D listed characteristic wastes.

2.3. Kansas City Waste Treatment and Recycling Plant

The Heritage Environmental Services' facility in Kansas City, Missouri, serves as a major fuel blending facility and aqueous waste treatment plant, accepting drum, truck and rail shipments. This plant also processes industrial wastewater and sludge. The facility uses four 30,000 gallon agitated tanks for fuel blending and a permitted drum storage area that can store up to 500 containers of hazardous waste.

The facility has a Part B Permit approval from the USEPA. The facility also has a Resource Recovery Certificate from the State of Missouri and a wastewater discharge permit from Kansas City.

2.4. Coolidge, Arizona Waste Treatment and Recycling Plant

The Coolidge, Arizona facility Received its Part B permit from the Arizona Department of Environmental Quality on February 10, 1999. In June 1998, the Coolidge facility submitted notification to the Arizona Department of Environmental Quality for a Solid Waste Facility accepting non-hazardous waste.

Wastes that are accepted into the Coolidge facility include Reactive wastes, Oils, Flammables and Corrosives. Services that the Coolidge facility will provide include Hazardous and Non-Hazardous Waste Disposal, Waste Minimization Audits, Transportation, Lab Pack Services, Household Hazardous Waste Collections and Environmental Assistance Programs.

2.5. RCRA Hazardous Waste Landfill

The Heritage RCRA landfill, located in Putnam County, Indiana, has been "state-of-the-science" in its design and operations since its' opening in 1981.

The facility has had a final RCRA Part B Permit since November 1986, which was one of the first landfill permits issued by EPA. Our new cells include a dual synthetic liner, leachate collection and leak detection systems, a three (3) foot compacted clay liner, and finally an under drain system for further protection. As cells are completed, a top synthetic liner is used to minimize infiltration.

A network of monitoring wells surrounds the facility. The groundwater monitoring system is re-evaluated annually and monitoring wells are added as needed to assure sound protection of the groundwater.

In addition to the engineered features, the Heritage Landfill is geologically isolated. Glacial till greater than100 feet in thickness underlies the facility. The permeability of this formation is nearly 10^{-8} centimeters per second. The limited presence of groundwater and the high cation exchange capacity of the clay soil also provide natural protection.

2.6. Heritage Thermal Services (HTS)

The Heritage Thermal Services incinerator in East Liverpool, Ohio can handle a wide variety of organic wastes in drums or bulk. This incinerator is considered the most technologically advanced incinerator in the country.

Typical Waste Streams include, Corrosive liquids and solids; Explosives (1.3, 1.4, 1.5, 1.6 on a case-by-case basis); Reactive wastes; Flammable liquids and solids; Organic peroxides and oxidizers (liquids and solids); Pesticides, herbicides, and insecticides; Aerosols and fuels; Lab packs; Miscellaneous hazardous and non-hazardous waste; DEA controlled substances; Mixed infectious hazardous waste; and Product recalls

2.7. Rineco Chemical

Rineco is an innovative leader in the waste management industry and North America's largest single-site fuel blending disposal provider. Rineco is headquartered in Haskell, Ark., near Little Rock. Rineco's high-quality fuel blender completes Heritage Environmental Services' waste technology offerings allowing us to be a one-stop-shop for our customers.

2.8. Transport Group

Heritage Transport provides hazardous waste transportation services to Heritage treatment and disposal facilities, and other EPA approved facilities. Heritage Transport has ICC authority in the lower 48 states and state hazardous waste transport licensing in most states. Truck terminals are located in Indiana, Ohio, North Carolina, Illinois, and Missouri and Arizona. Heritage Transport operates a nationwide drum waste transportation network ensuring prompt service for generators with small volumes of waste.

The fleet includes coded tank trailers, sludge box transport trailers, dump trailers, and van trailers for drum transport. Most of the tankers are equipped with vacuum loading systems for efficient loading of industrial wastes. Heritage has lined tankers that can handle very corrosive materials and portable storage tanks for temporary or long-term storage. Heritage sludge boxes, both open top and closed top, have sealed doors and tail gates so that the potential for leakage is eliminated. We also manage an extensive rail fleet of tank cars and solids handling cars.

2.9. Field Services / Industrial Maintenance

Heritage provides a full range of environmental field services with offices in Indianapolis, Indiana; Hammond, Indiana; Lemont (Chicago), Illinois; St. Louis, Missouri; Tulsa, Oklahoma; Louisville, Kentucky and Toledo, Ohio.

Heritage's professional staff consists of experienced professional engineers, chemists, environmental scientists, certified hazardous materials managers, and project managers. Heritage's operational crews have

extensive experience providing routine and non-routine field services. The Field Service's group owns a wide variety of equipment for conducting site remediation and construction.

The Heritage Industrial Maintenance group performs routine and plant shutdown maintenance projects. Typical projects include tank cleaning, water blasting, industrial sewer cleaning, and paint booth cleaning. All industrial maintenance crews are fully OSHA-trained and utilize dedicated equipment including high-pressure water blasters, separators, clarifiers, filters, wet/dry vacuum trucks, high volume heat exchangers and sludge pumps. Our crews routinely perform confined space entry cleaning procedures. By offering comprehensive industrial maintenance services, applying innovative equipment applications, and a full service environmental approach, Heritage is committed to providing long-term value.

The services offered by this group are diverse, ranging from routine industrial maintenance to large remedial actions. Specific services include:

- On-site treatment system research, design, construction, and operation - Our staff has considerable expertise in hazardous waste treatment process chemistry, and waste minimization projects. On a typical on-site project, we perform waste treatability studies to evaluate treatment alternatives. This is followed by process design together with budget capital and operating cost estimates of selected alternatives. After acceptance of the concept by our customer, we then proceed with detailed design, equipment procurement, construction management, and startup of the system on-site. In many instances, Heritage provides the capital for the entire system.

- Portable treatment systems, including sludge dewatering - Heritage has been applying its treatment knowledge and technology to remediation projects at customer sites. On many of these projects it is impracticable to transfer the waste to fixed treatment facilities due to the volume of material or its unusual form. With the new RCRA Land Ban requirements, offsite treatment and incineration costs are making onsite treatment options more attractive. Sometimes, the most cost effective solution may be to construct portable or temporary treatment systems that can be dismantled after the waste has been treated.

- Site remediation / Hydro-excavating - Each year Heritage performs more than 100 planned site cleanups. The projects cover a broad range of size and technologies. Some of Heritage's remedial projects result in only a few drums of waste. On the other end of the spectrum, we have excavated and treated more than 100,000 cubic yards of contaminated materials on a single project. Heritage provides a wide range of services to remediate contaminated sites. Some of these services include:

  - Drum, tank and lagoon sampling and analyses
  - On-site waste treatment / Stabilization / De-characterization
  - Contaminated soil excavation and disposal
  - Decontamination of industrial plants
  - Soil vapor / multi-phase fluid extraction
  - Soil and groundwater sampling and analyses

- Sludge removal and on-site de-watering
- Cleaning and removal of tanks
- *In-Situ* bioremediation of soils and groundwater
- Chlorinated solvent bio-remediation

- Industrial maintenance / Tank management and remediation - Heritage performs multi-faceted services for the industrial sectors involving tank, pit, sump, painting line and process system cleaning and inspection. These services are provided on a contract, turnaround, or emergency basis. Heritage has completed many successful cleaning projects for industrial clients involving:

  - Wastewater systems
  - Process tanks
  - Crude Oil Tanks
  - Cooling Towers
  - Process sumps
  - Plating systems
  - Painting lines / spray booths
  - Press Pits
  - Bag houses
  - Frac tanks

- Wastewater treatment services - Heritage can bring considerable plant operation experience together with our research and development capabilities to solve the most complex waste water treatment issues for our customers. Heritage can evaluate existing processes, perform wastewater treatability studies, evaluate conceptual process design alternatives, and make recommendations for system upgrades or improvements. Heritage can also perform turnkey design, construction and/or operation of upgraded facilities. Heritage engineers can act as the facilities certified wastewater treatment operator to oversee plant operation. We can also prepare and negotiate any discharge permits or construction permits required.

- Petroleum industry services – Heritage and its sister companies have been involved with the petroleum industry for more than sixty years. Heritage has developed a customized full-service approach to providing the petroleum industry with the environmental assistance that is required. Refinery and terminal storage tank cleaning, and associated residue processing have been performed by Heritage for many petroleum facilities. Heritage is able to meet the most demanding standards for confined space entry and vapor emission control standards established by clients or regulatory agencies.

- Emergency response, OPA and PERS agreements - Heritage has been providing 24-hour, 7-day a week emergency response services since 1976. Emergency crews and equipment are stationed at seven fully staffed locations: Indianapolis, Lemont, St. Louis, Toledo and Louisville and can be mobilized for emergency response actions across the country. We are certified with the U.S. Coast Guard as an Oil Pollution Action (OPA) contractor. We maintain required inventories of spill equipment and supplies at our key response locations.

Heritage is one of the few response contractors in the Midwest that provides full service planned emergency response capabilities (PERS). In addition to providing personnel and specialized equipment, Heritage has the ability to provide waste transportation, analytical services, and emergency storage and disposal for

wastes. Heritage also assists its clients in setting up contingency plans for spills and helping plant personnel provide adequate instruction to their employees prior to any emergency.

2.10. Technical Service Group

The Heritage Technical Services group provides a wide array of services and programs that are flexible enough to meet our customers' various needs in the most cost effective manner. Heritage's programs can be set up to provide comprehensive (segregating, packing, shipping, etc.) on site services or allow customers to pack their own materials by providing the necessary technical expertise and support.

- The Damaged Goods Service removes and disposes of commercial products in original packaging that are off-specification, damaged or have exceeded their shelf life. Heritage uses only environmentally acceptable methods of recycling, treatment or disposal.

- Lab Pack Services - Heritage provides a comprehensive Lab Pack program, which integrates its fieldwork and treatment centers. All aspects of the service including analyses, packaging, documentation, transportation, and disposal of waste are tailored to the client's needs.

  After an inventory review, Heritage will classify and segregate the waste in accordance with Department of Transportation (DOT), Environmental Protection Agency (EPA), and specific disposal facility guidelines. Heritage supplies trained field chemists to properly sample, package, label, and manifest the drums in full compliance with state and federal regulations. Heritage supplies the packaging materials and ensures that the final package meets all specifications, including those for marking, labeling, and manifesting.

- Household Waste Collection Services - Heritage also provides labor, equipment and management services for community and industry employee household hazardous waste collection events. The events, sponsored by municipalities, state agencies, and industrial clients, provide for various household cleaners, waste oils, herbicides, pesticides and other small quantities of household wastes to be disposed of in a safe and legal method.

2.10 Heritage Interactive Services

Heritage Interactive Services (Interactive) was established by Heritage Environmental Services in 2000 to meet the changing needs of Heritage customers. We are a comprehensive management company that uses an extensive supplier network to provide services and solutions to large multi-national corporations. Heritage Interactive is the link between corporate sustainability goals and environmental results across business units and geographic regions. Through a strategy of continuous improvement and teamwork, Interactive is dedicated to establishing the highest industry standards for quality, value, service and technology relating to the provision of manufacturing support services that focus on reducing the environmental footprint of our customers while minimizing risk and managing cost.

Our services include, but are not limited to:

- Silver Recovery/Refining
- Organics Collection
- Industrial Waste
- Universal Waste
- Recyclables (Sorted or Single Stream)
- IS2 Data Management
- Scrap Metals
- Construction & Demolition Waste
- Waste to Energy
- Materials Recovery
- Waste Removal
- Non-hazardous Waste
- Hazardous Waste
- Parts Washers
- Electronic Scrap
- Waste to Energy
- Product Destruction (End of Life or Returns)
- Biomedical Waste
- Waste Profiling
- Laboratory Analytical Services

The IS2 Data Management System is an innovative and powerful tool for tracking and reporting Sustainability Performance that addresses key components many companies' "Green" Policy Guidelines. The IS2 System has robust reporting capabilities and can provide data in a format compatible with any Sustainability Report or that complies with any applicable Regulatory requirements.

Heritage Interactive has developed a Total By-Product Management approach that has been implemented at over 2,000 customer locations throughout North America. The Interactive Total By-Product Management Program is a wide-ranging program that can encompass hazardous and non-hazardous waste, solid waste (trash), recycling and special projects under one umbrella. This progressive approach has demonstrated the capability of achieving a higher level of cost savings and landfill avoidance than the traditional line item or unit cost bidding methodology. Interactive partners with its customers to develop a program tailored to meet each customer's specific needs and objectives.

Program benefits include:

- Single Point of Contact for all service related to by-products
- Assistance in reducing wastes, enhancing reuse options, and increasing materials recycled
- Cost management
- One monthly invoice for all by-product services received
- Assistance with training personnel on by-product management procedures
- Internet data tracking and reporting
- Systemized environmental and financial audit process for all recommended suppliers
- Additional layer of environmental risk protection (Indemnification and Insurance)

2.11 Heritage Research Group (HRG): Waste Recovery, Reclamation, and Recycling

The Heritage Research Group has a staff of 22 professionals that service both the environmental and asphalt businesses for Heritage. This unique group of chemists and engineers has several patents to its credit and is a valuable resource when we are solving customer waste management needs.

2.12 Heritage Technical Consulting Group

Our Technical Services group can provide civil engineering, environmental engineering and consulting services. Our clients are industrial and municipal. We promise quality engineering and services at competitive rates. Our goals are to assist the client to achieve and then maintain compliance with Federal, State and Local environmental requirements. Specific services include:

- RCRA Compliance Documentation
  - Waste Determination Assistance
  - Contingency Plans / Waste Minimization Plan / Training Plans
- Training
  - RCRA / DOT HAZMAT Training
  - OSHA Haz Com / HAZWOPER Training
- Management Systems Implementation
  - ISO 14001 Implementation and Training
  - OSHAS 18001 Implementation and Training
- Onsite Compliance Management
  - RCRA Inspections
  - LDAR Compliance / Storm Water Inspections
- Audits / Assessments
  - ISO / OSHAS / EHS Internal Audits
  - Waste Audits / Phase I / II Environmental Site Assessments
- Emergency Planning
  - SPCC / FRP Plan Preparation / Drills
  - FRP Readiness Audits
- Permitting / Reporting
  - CAA, RCRA, CWA Permitting
  - Biennial Reports / Tier I and II Reporting / Form R / TRI Reporting

3 OTHER AFFILIATED COMPANIES / SERVICES

3.1 Solid Oak Oilfield Services

During the drilling and completions process, an average well requires a substantial amount of water to be brought both to and from the wellhead. Trucking the water can be complicated, highly variable, and expensive; additionally local residents and businesses are often concerned that higher truck traffic with heavier loads will cause road damage and congestion. These considerations guide drillers' decisions about proper management of water on a daily basis. The above dynamics, combined with today's environment, make the choice clear that Solid Oak's unique platform for water transfer is the best decision for most drillers. Since launching its water transfer services in the Utica/Marcellus shale play in 2010, Solid Oak has shown strong growth by providing services through a fairly unique approach—constructing aboveground

pipelines across varying terrains and safely and expeditiously delivering water for continuous production needs.

4 ENVIRONMENTAL HEALTH & SAFETY PROGRAMS

Heritage recognizes the vital importance of the health, safety, and welfare of its most valuable resource - the employees. Heritage takes special pride in its commitment to health and safety. We share a growing awareness with the environmental community regarding the significance of a strong health and safety program by providing for optimal efficiency and economy while minimizing personal and corporate liability for Heritage and its customers. The following sections address specific components of the Heritage health and safety program.

4.1 Management Leadership and Employee Programs

Heritage maintains a world class behavior based program centered on proactive measures, safety awareness and continual improvement. A key component to our system is our safety observation program. Positive and negative safety observations are required to be submitted by all personnel in the company as a safety awareness tool and also as a proactive measure to address potential unsafe acts and conditions prior to and incident. They are tracked, analyzed, and communicated to personnel at all levels of the organization.

The Heritage Executive Safety Team has been created to assure a continued commitment to our world class safety system and to continually improving our system and culture. Some of the functions of the team include:

- Development and management of the Heritage 6Safety program which is a top level safety awareness program designed to both train as well as solicit employee suggestions for safety improvements and recognize employees for outstanding safety related actions.
- A monthly safety call with all location H&S personnel is conducted to share best practices and roll out new initiatives and ideas.
- The executive safety committee also reviews all incident / near miss investigations to assure they are being conducted in an acceptable manner and to mentor location management.

- We have incorporated a quality / environmental / safety management system into our business process that focuses on the continual improvement of our organization. Our system complies with the ISO 9001 quality standard and ISO 14001 environmental management standards. In addition, we are members of 3rd party vendor management services (such as ISNET World, PEC, CHWMEG and others) which review and certify our programs on an ongoing basis.

4.2 Worksite Analysis

For all on site projects site safety plans are developed and communicated to all workers involved in the project. These project site safety plans are developed prior to staffing the project by doing a site

characterization as part of the overall job review process. Such development would include, but not limited to, the following:

- Sampling / analysis of soil, product, and/or air
- Hazard determination
- Research hazards for possible engineering and/or administrative controls
- Research hazards for personal protective gear
- Locate emergency services
- Determine exclusion zones, decontamination zones and clear zones
- Determine appropriate emergency procedures

4.3 Hazard Prevention and Control

Job safety analysis and / or detailed hazard analysis assessments are required for all Heritage work on customer worksites. These are prepared by project management, usually after an initial walk through of the site and a modified and communicated daily as conditions and project scope change. In addition to site specific analysis Heritage has a corporate safety program with written policies, which require each division to write and implement customized procedures for each of its fixed facility and field operations.

To assure safety requirements are being met inspections are conducted by on site personnel and on site management at regular intervals during the course of the project. Corporate safety personnel also conduct detailed inspections of all Heritage facilities and active on-site projects annually at a minimum. All items noted during audits are documented and tracked through completion of all indicated action items through our corporately managed ISO 9001 registered corrective action process.

4.4 Environmental Health & Safety Training

Heritage hazardous waste operations employees under 29 CFR 1910.120 receives a minimum of 40-hours of initial training with at least 3 days of supervised on-the-job training. A part of this initial training is participation in the Heritage Short Service Employee Program. This program is designed to mentor new employee and foster a safety first attitude in all employees.

Safety training includes, but is not limited to, the following:

- Basic toxicology
- First aid
- Hazard communication
- Drum / container handling
- Fire extinguishers
- DOT HAZMAT
- DOT Security Training
- Confined space entry and rescue
- Personal protective equipment
- Site characterization & monitoring
- Electrical Safety
- Lockouts, tag outs, hot work, etc.
- Employee Stop Work Authority
- RCRA / EPA Regulations

Supervisors receive additional training in accident investigation, report completion, supervision of operations and field workers, and safety supervision.

Additionally, monthly training and safety sessions are held to familiarize employees with new equipment, hazards, and technology and to reinforce prior training. Daily toolbox meetings, beginning every operational meeting with a safety minute, and a daily documented review of all job safety plans and job specific JSA's are also utilized by Heritage to reinforce employee training.

4.5 Medical Monitoring / Surveillance Program - The medical monitoring program is designed to protect the long and short-term health of Heritage employees and to evaluate the employees' ability to perform remediation work, wear respirators, drive vehicles, etc. This includes evaluation of factors that could affect such things as heavy lifting, heat stress, hearing, eyesight, and general physical condition. This is accomplished by the establishment of baseline levels at the pre-employment physical and the subsequent monitoring through annual and post-employment physicals.

4.6 OSHA Injury and Illness Data

Heritage OSHA Log Summary	2016	2017	2018	2019	2020
a) Lost Time Cases (Not Days Lost):	0	2	4	5	5
b) Restricted Workday Cases:	3	5	13	7	9
c) Medical Treatment Cases:	5	5	6	13	7
d) Total Recordable Cases:	8	12	23	26	21
e) Total Hours Worked:	1,769,098	3,661,658	3,509,280	3,279,851	3,582,817
f) Average Employees:	804	1565	1499	1402	1531
g) Total Lost Work Days:	0	90	265	330	65
h) Total Restricted Work Days:	91	152	483	270	525
i) Lost Days + Restricted Days:	91	242	748	600	590
j) Lost Day Rate:	0.00	0.11	0.23	0.30	0.28
k) DART Rate (Lost & Rest Rate):	0.33	0.38	0.97	0.73	0.78
l) Recordable Rate:	0.90	0.66	1.31	1.40	1.17
m) Recordable Rate – 3 yr ave:	1.45	0.95	0.96	1.12	1.29
n) EMR Rate:	0.82	0.89	0.81	0.83	0.81
o) Severity Rate:	10.29	13.53	42.63	36.59	32.93
q) First Aid:	74	115	124	103	96

Staff	Experience – Project Role
Chad Dodson	Project Manager - 20 year veteran of the environmental industry. Vast experience in emergency response, spill clean up and site remediation. Will direct site activities, coordinate resources and manage all record keeping.
Colton Macy	Crew supervisor – Experienced field supervisor, will manage day to day activities under the direction of the project manager. Will conduct safety meetings, coordinate with external resources and manage field crew activities.
Dakota Gifford	Field Technician- HAZWOPER trained laborer and equipment operator. Certified forklift driver and experienced in industrial cleaning operations.
Matthew Shelley	Lead Operator- qualified equipment operator and CDL holder. Will be responsible for staging and relocating boxes on site as necessary. Will operate equipment during loading and consolidating activities.

HERITAGE®

RCRA Regulatory Review Course

David Smith

In recognition of successful completion of Resource Conservation and Recovery Act (RCRA) LQG training in accordance with 40 CFR 262.17(a)(7) and SQG training 40 CFR 262.16(b)(9)(iii).

Completion Date: 6/17/2020

Training Topics Covered:

- *RCRA Regulatory Program*
- *Hazardous Waste Determinations*
- *Generator Classification and Management Standards*
- *Preparedness and Prevention*
- *Contingency Planning*
- *Personnel Training*
- *Recordkeeping*
- *Land Restrictions*
- *Manifesting*
- *Used Oil*
- *Universal Waste*

Angie Martin PE, CHMM, Vice President
Heritage Environmental Services, LLC

Elizabeth Dillon, HSE Training Coordinator
Heritage Environmental Services, LLC

50th ANNIVERSARY 1970 - 2020

Location of Trainer & Training Documentation:
Heritage Environmental Services, LLC
6510 Telecom Drive, Ste. 400
Indianapolis, IN 46278

HERITAGE®

DOT Training Certification

David Smith

This is to certify that Hazmat Employee named above has completed all training and testing requirements for compliance with 49 CFR 172.704 (Subpart H—Training for the shipment of hazardous materials.)

Completion Date: 6/18/2020

Training Topics Covered:

Hazardous Materials Table	*Packaging*
Shipping Papers	*Highway Transportation*
Uniform Hazardous Waste Manifest	*ERG*
Marking & Labeling	*General Security*
Placarding	*General Awareness*
	Safety Covered Throughout

Angie Martin PE, CHMM, Vice President
Heritage Environmental Services, LLC

Elizabeth Dillon, HSE Training Coordinator
Heritage Environmental Services, LLC

50th ANNIVERSARY 1970 - 2020

Location of Trainer & Training Documentation:
Heritage Environmental Services, LLC
6510 Telecom Drive, Ste. 400
Indianapolis, IN 46278

CERTIFICATE OF COMPLETION

This certifies that

David Smith

has successfully met the requirements of

OSHA Hazardous Waste Operations & Emergency Response

(29 CFR 1910.120)

40 Hour Training Course

On November 8, 2010

James O. Folsom

Instructor

James O. Folsom & Associates, Inc.

Tulsa, Oklahoma – 918/583-4000

Tulsa Technology Center

THIS CERTIFIES THAT

Dave Smith

HAS SUCCESSFULLY COMPLETED THE COURSE OF INSTRUCTION IN:

8 HOUR REFRESHER

HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE

29 CRF 1910.120

Jim Carpenter

INSTRUCTOR Jim Carpenter

November 4, 2020

DATE

TulsaTech .edu

"As an OSHA Outreach trainer, I verify that I have conducted this OSHA Outreach training class in accordance with OSHA Outreach Training Program requirements. I will document this class to my OSHA Authorizing Training Organization. Upon successful review of my documentation, I will provide each student their completion card within 90 days of the end of the class."

New Environment, Inc.

This is to certify that

Dave Smith

has satisfactorily completed NEI's

HAZWOPER

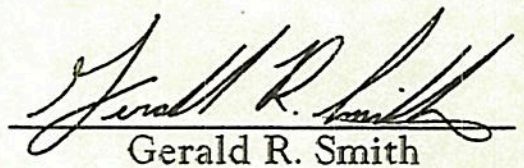
[29CFR1910.120]

8-Hour Refresher Program

11/04/2020
Date

Tulsa, OK
Location

800.732.3073
5031 State Route 305
Fowler, Ohio 44418



Gerald R. Smith

180114
Student ID Number

Certificate of Achievement

Presented in recognition of successful completion of
OSHA 40 Hour Hazardous Waste Operations and Emergency Response Training Refresher Course (29 CFR 1910.120)

Chad Dodson

has been awarded this certificate by

Heritage Environmental Services, LLC
On
March 19, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of
OSHA 40 Hour Hazardous Waste Operations and Emergency Response Training Refresher Course (29 CFR 1910.120)

Colton Macy

has been awarded this certificate by

Heritage Environmental Services, LLC
On
March 19, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of
OSHA 40 Hour Hazardous Waste Operations and Emergency Response Training Refresher Course (29 CFR 1910.120)

Dakota Gifford

has been awarded this certificate by

Heritage Environmental Services, LLC
On
March 19, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of
OSHA 40 Hour Hazardous Waste Operations and Emergency Response Training Refresher Course (29 CFR 1910.120)

Matthew Shelley

has been awarded this certificate by

Heritage Environmental Services, LLC
On
March 19, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of

DOT HAZMAT (49 CFR 172.700)

Chad Dodson

has been awarded this certificate by

Heritage Environmental Services, LLC

On

February 9, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of

DOT HAZMAT (49 CFR 172.700)

Colton Macy

has been awarded this certificate by

Heritage Environmental Services, LLC

On

February 9, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of

DOT HAZMAT (49 CFR 172.700)

Dakota Gifford

has been awarded this certificate by

Heritage Environmental Services, LLC

On

February 9, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of

DOT HAZMAT (49 CFR 172.700)

Matthew Shelley

has been awarded this certificate by

Heritage Environmental Services, LLC

On

February 9, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of
RCRA Resource Conservation and Recovery Act Training
Refresher Course (40 CFR 265.16)

Dakota Gifford

has been awarded this certificate by

Heritage Environmental Services, LLC
On
February 12, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of
RCRA Resource Conservation and Recovery Act Training
Refresher Course (40 CFR 265.16)

Matthew Shelley

has been awarded this certificate by

Heritage Environmental Services, LLC
On
February 12, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

Presented in recognition of successful completion of
RCRA Resource Conservation and Recovery Act Training
Refresher Course (40 CFR 265.16)

Chad Dodson

has been awarded this certificate by

Heritage Environmental Services, LLC
On
February 12, 2021

Joe Rohlfing, Heritage Environmental Services

Certificate of Achievement

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RCRA Resource Conservation and Recovery Act Training
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Colton Macy

has been awarded this certificate by

Heritage Environmental Services, LLC
On
February 12, 2021

Joe Rohlfing, Heritage Environmental Services