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6-30-14



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5

IN THE MATTER OF:

Lindsay Light II Operable Unit 14  
545 North McClurg Court  
Chicago, Illinois

Respondent:

GHB-630 LLC

ADMINISTRATIVE SETTLEMENT  
AGREEMENT AND ORDER ON  
CONSENT FOR REMOVAL ACTION

**V-W-14-C-009**

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

Proceeding Under Sections 104, 106(a), 107  
and 122 of the Comprehensive  
Environmental Response, Compensation,  
and Liability Act, as amended,  
42 U.S.C. §§ 9604, 9606(a), 9607 and 9622

**TABLE OF CONTENTS**

I.	JURISDICTION AND GENERAL PROVISIONS .....	1
II.	PARTIES BOUND.....	1
III.	DEFINITIONS .....	2
IV.	FINDINGS OF FACT .....	3
V.	CONCLUSIONS OF LAW AND DETERMINATIONS .....	4
VI.	SETTLEMENT AGREEMENT AND ORDER .....	6
VII.	DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR .....	6
VIII.	WORK TO BE PERFORMED .....	7
IX.	SITE ACCESS .....	12
X.	ENVIRONMENTAL COVENANT/INSTITUTIONAL CONTROLS.....	13
XI.	ACCESS TO INFORMATION.....	15
XII.	RECORD RETENTION.....	15
XIII.	COMPLIANCE WITH OTHER LAWS .....	16
XIV.	EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES .....	16
XV.	AUTHORITY OF ON-SCENE COORDINATOR .....	17
XVI.	PAYMENT OF RESPONSE COSTS.....	17
XVII.	DISPUTE RESOLUTION.....	19
XVIII.	FORCE MAJEURE.....	19
XIX.	STIPULATED PENALTIES.....	20
XX.	COVENANT NOT TO SUE BY U.S. EPA .....	23
XXI.	RESERVATIONS OF RIGHTS BY U.S. EPA .....	23
XXII.	COVENANT NOT TO SUE BY RESPONDENT .....	24
XXIII.	OTHER CLAIMS .....	25
XXIV.	CONTRIBUTION .....	25
XXV.	INDEMNIFICATION.....	26
XXVI.	MODIFICATIONS.....	26
XXVII.	NOTICE OF COMPLETION OF WORK .....	27
XXVIII.	NOTICES AND SUBMISSIONS .....	27
XXIX.	SEVERABILITY/INTEGRATION/APPENDICES .....	28
XXX.	EFFECTIVE DATE .....	29

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

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("U.S. EPA") and Respondent. This Settlement Agreement provides for the performance of removal actions by Respondent including recording deed restrictions on portions of the Site where radioactive contamination may be present and the reimbursement of certain response costs incurred by the United States at or in connection with the property designated Lindsay Light Operable Unit ("OU") 14, located at 545 North McClurg Court, Chicago, Illinois and known as the "Site."
2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622, as amended ("CERCLA"). This authority has been delegated to the Administrator of the U.S. EPA by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by U.S. EPA Delegation Nos. 14-14-A, 14-14-C and 14-14-D, and to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A, 14-14-C and 14-14-D.
3. U.S. EPA has notified the State of Illinois (the "State") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
4. U.S. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of facts, conclusions of law, and determinations in Sections IV and V of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

## **II. PARTIES BOUND**

5. This Settlement Agreement applies to and is binding upon U.S. EPA and upon Respondent and its beneficiaries, successors and assigns. Any change in ownership or corporate status of the Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter the Respondent's responsibilities under this Settlement Agreement.
6. Respondent is jointly and severally liable for carrying out all activities required by this Settlement Agreement.

7. Respondent shall ensure that its contractors, subcontractors, and representatives comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance with this Settlement Agreement.

### **III. DEFINITIONS**

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

- a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*
- b. "Day" shall mean a calendar day unless otherwise specified. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.
- c. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXX (Effective Date).
- d. "Interest" shall mean interest at the rate specified for interest on investments of the U.S. EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.
- e. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.
- f. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral or an upper or lower case letter.
- g. "Parties" shall mean U.S. EPA and Respondent.
- h. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.* (also known as the Resource Conservation and Recovery Act).
- i. "Respondent" shall mean GHB-630 LLC.
- j. "Response Costs" shall mean all costs, including but not limited to, direct and indirect costs, that the United States has incurred or incurs on or after April 1, 2009, reviewing or

developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement. Response costs shall also include, but not be limited to, payroll costs, contractor costs, travel costs, laboratory costs, the cost incurred pursuant to Paragraph 24 (including, but not limited to, costs and attorneys fees and any monies paid to secure access, including, but not limited to, the amount of just compensation), and Paragraph 37 (Emergency Response).

- k. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXIX (Severability/Integration/Attachment)). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.
- l. "Site" shall mean the Lindsay Light II, Operable Unit 14, 545 North McClurg Court and formerly known as 401- 415 East Ohio Street, and 410-414 East Grand Avenue, Superfund Site in Chicago, Cook County, Illinois and depicted generally on the map attached as Exhibit A.
- m. "State" shall mean the State of Illinois.
- n. "Uninvestigated Site Area" shall mean any portion of the Site which is not radiologically surveyed in 18-inch lifts or any portion of the site where any known radioactive contamination will remain after completion of the Work.
- o. "U.S. EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- p. "Waste Material" shall mean 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and 4) any "hazardous material" under Section 3.125 of the Illinois Environmental Protection Act, 415 ILCS 5/3.125 (2002).
- q. "Work" shall mean all activities the Respondent is required to perform under this Settlement Agreement.
- r. "Work Plan" shall mean the U.S. EPA-approved work plan including schedule described in Section VIII Work to be Performed.

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

9. Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds that:
- a. The Site is located at 545 North McClurg Court in Chicago, Illinois.

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

- b. The Site is located in the vicinity of three other Lindsay Light OUs, specifically, OU 10 (400 East Illinois), OU 00 (316 E. Illinois) and OU 3 (341 E. Ohio) where thorium contamination was previously identified in soils and removed.
- c. Beginning in 1904, Lindsay Light manufactured gas lights and gas mantles for residential and commercial use at several locations in the Streeterville area. The production of thorium for its gas light mantles resulted in a sandy waste known as mill tailings that was used as fill material in the Streeterville area. Lindsay Light corporate records indicate that the company planned to move all of its Streeterville operations to the City of West Chicago by September 1936.
- d. Historical news reports and Lindsay Light board of director's minutes indicated, that in addition to thorium, Lindsay Light also processed or handled other radioactive rare earths and radioactive materials at its Streeterville facilities and in West Chicago.
- e. The Lindsay Light mill tailings contain thorium-232 which is a radionuclide that is a hazardous substance under Section 101(140) of CERCLA, 42 U.S.C. § 9601(14).
- f. U.S. EPA designated the initial thorium removal action at the 316 East Illinois Street which was the former location of Lindsay Light's ore processing plant as the Lindsay Light II Removal Site. Following that initial removal action during which approximately 24,000 cubic yards of thorium contaminated soils were removed, U.S. EPA has identified 20 other Lindsay Light II removal action operable units. To date, approximately 50,000 cubic yards of thorium contaminated material associated with the Lindsay Light II facility have been removed from the Streeterville area.
- g. Subsurface thorium contamination has been identified at the Site. The highest thorium sample result to date identified 9.1 picocuries per gram (pCi/g) total radium, which exceeds the 7.1 pCi/g cleanup criterion for the Streeterville area of Chicago.
- h. Respondent began to excavate the Site on June 12, 2014.
- i. Construction laborers, utility workers and the public may be exposed to elevated levels of radiation if the Site is excavated without proper radiation monitoring and management and disposal of radioactively contaminated materials.
- j. Respondent may identify and remove radioactively contaminated soil only from certain portions of the Site.

**V. CONCLUSIONS OF LAW AND DETERMINATIONS**

10. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, U.S. EPA has determined that:

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

- a. The Site is a part of a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
- b. The contamination found at the Lindsay Light II facility, as identified in the Findings of Fact above, includes a "hazardous substance" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
- c. The Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
- d. The Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is jointly and severally liable for performance of response action and for response costs incurred and to be incurred at the Site.
  - i. Respondent GHB-630 LLC, is the "owner" and/or "operator" of the Site, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).
- e. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility into the "environment" as defined by Sections 101(22) and 101(8) of CERCLA, 42 U.S.C. §§ 9601(22) and 9601(8).
- f. The conditions present at the facility constitute a threat to public health, welfare, or the environment based upon the factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, as amended ("NCP"), 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:
  - i. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; this factor is present at the facility due to the existence of elevated levels of thorium in subsurface soils that will be exposed by the removal of overburden and excavation.
  - ii. Other situations or factors that may pose threats to public health or welfare or the environment; this factor is present at the facility due to the existence of elevated levels of thorium in subsurface soils that may be exposed during construction activities that may expose construction laborers, utility workers and the public to excessive levels of thorium.
- g. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants; this factor is present at the Site due to the existence of elevated levels of thorium found in subsurface soils that will be exposed by the removal of overburden and excavation.
  - i. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; this factor is present at the facility due to the existence of elevated levels of thorium in subsurface soils that will be exposed by the removal of overburden and excavation.
  - ii. Other situations or factors that may pose threats to public health or welfare or the environment; this factor is present at the facility due to the existence of elevated levels of thorium in subsurface soils that may be exposed during construction activities that may expose construction laborers, utility workers and the public to excessive levels of thorium.
- h. The removal actions required by this Settlement Agreement, including environmental covenants, and/or institutional controls, are necessary to protect the public health,

welfare, or the environment, 42 U.S.C. § 9604(a)(1), is in the public interest, 42 U.S.C. § 9622(a), and, if carried out in compliance with the terms of this Settlement Agreement, will be done properly and promptly by the Respondent and considered consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

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

11. Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all Exhibits to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

#### **VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR**

12. Respondent has selected a supervising contractor known as RSP GaiaTech to perform the Work. Respondent has provided U.S. EPA with the qualifications of RSP GaiaTech. Respondent has also notified U.S. EPA of the names of TRI, Inc. and RSSI as the subcontractors retained to perform the Work at the Site. If Respondent contracts with any other contractor(s) or subcontractor(s) to perform Work, Respondent must provide notice of the name(s) and qualification(s) of such person(s) at least 5 business days prior to commencement of such Work. U.S. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondent. If U.S. EPA disapproves of a selected contractor, Respondent shall retain a different contractor and shall notify U.S. EPA of that contractor's name and qualifications within 3 business days of U.S. EPA's disapproval. The contractor must demonstrate compliance with American National Standards Institute/American Society for Quality Control ("ANSI/ASQC") E-4-2004, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), by submitting a copy of the contractor's Quality Management Plan ("QMP"). The QMP should be prepared consistent with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B0-1/002) March 2001, Reissue Notice May 2006, or equivalent documentation as required by U.S. EPA. Any decision not to require submission of the contractor's QMP should be documented in a memorandum from the On-Scene Coordinator and Regional quality assurance personnel to the Site file.

13. Respondent has designated John Yang as the Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site work. U.S. EPA retains the right to disapprove of any subsequent designated Project Coordinator. If U.S. EPA disapproves of a designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify U.S. EPA of that person's name, address, telephone number, and qualifications within 4 business days following U.S. EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from U.S. EPA relating to this Settlement Agreement shall constitute receipt by Respondent.

14. U.S. EPA has designated Verneta Simon of the Emergency Response Branch, Region 5, as the On-Scene Coordinator ("OSC") and Gene Jablonowski, Remedial Project Manager, of the Remedial Response Branch, Region 5 as the alternate OSC. Except as otherwise provided in this Settlement Agreement, Respondent shall direct all submissions required by this Settlement Agreement to the OSCs in accordance with Section XXVIII Notices and Submissions. Respondent is encouraged to make its submissions to U.S. EPA on recycled paper (which includes significant post consumer waste paper content where possible) and using two-sided copies.

15. U.S. EPA and Respondent shall have the right, subject to Paragraph 13, to change their respective designated OSCs or Project Coordinator. U.S. EPA shall notify the Respondent, and Respondent shall notify U.S. EPA, as early as possible before such a change is made, but in no case less than 24 hours before such a change. The initial notification may be made orally but it shall be promptly followed by a written notice.

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

16. Respondent shall perform, at a minimum, the following removal activities:

- a. Develop a Work Plan for the radiological assessment of the site.
- b. Develop and implement a site health and safety plan.
- c. Develop and implement an air monitoring plan.
- d. Develop and implement site security measures.
- e. Conduct land surveying to the extent necessary to establish a grid system to locate all property boundaries, special features (pipes, storage tanks, etc.), and sample locations.
- f. Conduct radiation surveillance and sampling in compliance with the U.S. EPA-approved work plan.
- g. Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the Respondent to correlate subsurface radiation levels and radionuclide content, and to determine the disposal facility.
- h. Conduct off-site radiological surveying and sampling as necessary should contamination be discovered within the sidewalk rights-of-ways surrounding the Site and, at a minimum implement 40 C.F.R. §192 if deemed necessary.
- i. Based upon soil results, remove, transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

- j. The soil clean-up criterion is 7.1 pCi/g total radium (Ra-226 + Ra-228) including background, unless analyses indicate the existence of additional contaminants, hazardous substances, pollutants or waste.
- k. If any portion of the Site is not radiologically surveyed in 18-inch lifts or if any known contamination will remain after completion of the Work, then, using a scaled Site map with survey grade coordinates and elevations, Respondent shall identify and denote all locations at the Site that were not radiologically surveyed in 18-inch lifts or where any known contamination will remain after completion of the Work and shall implement a U.S. EPA-approved Environmental Covenant or other U.S. EPA-approved institutional controls pertaining to the Site.
- l. Record a U.S. EPA-approved Environmental Covenant which runs with the land and that will require radiation monitoring whenever subsurface soils at the Site are exposed or excavated, as well as proper management and disposal of any radioactively contaminated material encountered.

17. Work Plan and Implementation.

- a. On March 26, 2014, U.S. EPA approved a Thorium Screening Investigation and Soil Management Work Plan dated March 14, 2014 that will be incorporated into the Work Plan, and will include a schedule and Quality Assurance Project Plan (QAPP) (unless the OSC has determined that the circumstances involve non-complex removal work) for performing the removal action generally described in Paragraph 16 above. The QAPP should be prepared in accordance with "EPA requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001), and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February, 1998).

The following documents shall be used for the development of QAPPs for Region 5 Superfund sites:

- The Uniform Federal Policy for Quality Assurance Projects Plans (UFP-QAPP), OSWER Directive 9272.0-17;
- EPA Requirements for Quality Assurance Project Plans QA/R-5 (EPA/240/B-01/003), March 2001, Reissued May 2006.

The following guidance may be used in conjunction with the requirements above:

- EPA Guidance for Quality Assurance Project Plans QA/G-5 (EPA/240/R-02/009), December 2002.
  - Guidance on Choosing a Sampling Design for Environmental Data Collection EPA QA/G-5S, December 2002.
- b. U.S. EPA may approve, disapprove, require revisions to, or modify the draft Work Plan in whole or in part. If U.S. EPA requires revisions, Respondent shall submit a revised draft Work Plan within 7 business days of receipt of U.S. EPA's notification of the

required revisions. Respondent shall implement the Work Plan as approved in writing by U.S. EPA in accordance with the schedule approved by U.S. EPA. Once approved, or approved with modifications, the Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.

Respondent shall not commence any Work except in conformance with the terms of this Settlement Agreement. Respondent shall not commence implementation of the Work Plan developed hereunder until receiving written U.S. EPA approval pursuant to Paragraph 17(b).

18. Health and Safety Plan.

Respondent has submitted for U.S. EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-Site work under this Settlement Agreement. This plan must be prepared consistent with U.S. EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If U.S. EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by U.S. EPA and shall implement the plan during the pendency of the removal action.

19. Quality Assurance and Sampling.

- a. All sampling and analyses performed pursuant to this Settlement Agreement shall conform to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures. Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate U.S. EPA guidance. Respondent shall follow, as appropriate, "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Respondent shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001, reissued May 2006)," or equivalent documentation as determined by U.S. EPA. U.S. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements. Respondent shall prepare a Quality Assurance Project Plan ("QAPP") as part of the Work Plan except in circumstances involving emergency or non-complex removal work. The QAPP should be prepared in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001), and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998).

- b. Upon request by U.S. EPA, Respondent shall have such a laboratory analyze samples submitted by U.S. EPA for QA monitoring. Respondent shall provide to U.S. EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.
- c. Upon request by U.S. EPA, Respondent shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples. Respondent shall notify U.S. EPA not less than 3 business days in advance of any sample collection activity, unless shorter notice is agreed to by U.S. EPA. U.S. EPA shall have the right to take any additional samples that U.S. EPA deems necessary. Upon request, U.S. EPA shall allow Respondent to take split or duplicate samples of any samples it takes as part of its oversight of Respondent's implementation of the Work.

20. Reporting.

- a. Respondent shall submit a written progress report to U.S. EPA concerning actions undertaken pursuant to this Settlement Agreement every 30th day after the date of receipt of U.S. EPA's approval of the Work Plan until termination of this Settlement Agreement, unless otherwise directed in writing by the OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.
- b. Respondent shall submit 3 copies of all plans, reports or other submissions required by this Settlement Agreement, or any approved work plan. Upon request by U.S. EPA, Respondent shall submit such documents in electronic form.
- c. Respondent shall prior to the transfer or conveyance of any interest in real property at the Site (excluding condominium units or parking spaces), give written notice to the transferee that the property is subject to this Settlement Agreement and written notice to U.S. EPA of the transfer or conveyance, including the name and address of the transferee. Respondent also agrees to require that its successors comply with the immediately preceding sentence and Sections IX (Site Access), X (Environmental Covenant/Institutional Control Document) and XI (Access to Information).

21. Final Report.

Within 60 calendar days after completion of all Work required by Section VIII of this Settlement Agreement, Respondent shall submit for U.S. EPA review a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports" and with the guidance set forth in "Superfund Removal Procedures: Removal Response Reporting - POLREPS and OSC Reports" (OSWER Directive No. 9360.3-03, June 1, 1994). The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in

complying with the Settlement Agreement, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

"Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

22. Off-Site Shipments.

- a. Radioactive Waste Material. Respondent will transport radioactive waste material to a disposal facility licensed to accept radioactive Waste Material from the Site. Prior to the initial shipment of radioactive Waste Material originating from the Site, Respondent shall provide written notification of such shipment to the appropriate state environmental official and to the On-Scene Coordinators.
  - i. Respondent shall include in the written notification the following information: 1) the name and location of the facility to which the Waste Material is to be shipped; 2) the type and quantity of the Waste Material to be shipped; 3) the expected schedule for the shipment of the Waste Material; and 4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.
  - ii. The identity of the receiving facility and state will be determined by Respondent following the award of the contract for the disposal of Waste Material from the Site. Respondent shall provide the information required by Paragraph 22(a) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.
- b. Other Waste Material. If Respondent encounters any hazardous substances that are not radioactively contaminated in the course of conducting the Work, then before shipping any such non-radioactively contaminated hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondent shall obtain U.S. EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall only send hazardous substances, pollutants, or contaminants

from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

- i. Prior to the initial shipment of non-radioactively contaminated Waste Material originating from the Site, Respondent shall provide written notification of such shipment to the appropriate state environmental official and to the On-Scene Coordinators. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed 10 cubic yards. Respondent shall comply with the terms and conditions of the notification requirements of Paragraph 22(a)(i). for each such shipment of non-radioactive hazardous substances, pollutants, and contaminants.
- ii. The identity of any facility and state receiving the non-radioactively contaminated Waste Material will be determined by Respondent following the award of the contract for the removal action. Respondent shall provide the information required by Paragraph 22(a) and 22(b) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

#### **IX. SITE ACCESS**

23. If the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by the Respondent, Respondent shall, commencing on the Effective Date, provide U.S. EPA, the State, and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

24. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within 10 business days after the Effective Date, or as otherwise specified in writing by the OSC. Respondent shall immediately notify U.S. EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" include the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. U.S. EPA may then assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as U.S. EPA deems appropriate. Respondent shall reimburse U.S. EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XVI (Payment of Response Costs).

25. Notwithstanding any provision of this Settlement Agreement, U.S. EPA and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

**X. ENVIRONMENTAL COVENANT/INSTITUTIONAL CONTROL DOCUMENT**

26. Post-Removal Site Control. Consistent with Section 300.415(l) of the NCP and OSWER Directive No. 9360.2-02, upon completion of all Work required by Section VIII of this Settlement Agreement, if any portion of the Site is not radiologically surveyed in 18-inch lifts or if any known contamination will remain after completion of the Work then:

- a. In accordance with the Work Plan, Respondent shall submit to U.S. EPA a scaled Site map of the Uninvestigated Site Area with survey grade coordinates and elevations, showing the location of any known radioactively-contaminated Waste Material or areas of the Site that have not been screened in 18inch lifts to native sand; and
- b. If Respondent, its contractors, representatives or agents disturb, expose or intrude upon the soils in the Uninvestigated Site Area, Respondent, its contractors, representatives and agents shall notify U.S. EPA both by telephone and in writing of plans to work in the Uninvestigated Site Area at least 72 hours prior to (but no more than 21 calendar days in advance of) commencing such activities. If material containing total radium exceeding 7.1 pCi/g is identified, the Respondent shall provide a letter report to U.S. EPA explaining how the work was conducted in accordance with the Work Plan within 60 days of completion of the work.

27. Within thirty (30) days of the completion of all Work required by Section VIII of the Settlement Agreement, if any portion of the Site is not radiologically surveyed in 18-inch lifts or if any known contamination will remain after completion of the Work, Respondent shall record, with the Recorder of Deeds, Cook County, Illinois, an Environmental Covenant, pursuant to the Uniform Environmental Covenants Act, 765 ILCS Ch.22 (UECA) (Environmental Covenant), that the U.S. EPA and Illinois EPA have approved in writing for this Site, and Respondent agrees that every subsequent deed or conveyance or transfer of any property interest instrument will be subject to the Environmental Covenant. The Respondent further agrees that the language in the Environmental Covenant shall not be modified or removed from the Environmental Covenant without pre-approval from U.S. EPA, as described in Paragraph 28.

- a. In the event of a conveyance or transfer of property interest, Respondent's obligations under this Settlement Agreement, including, but not limited to, its obligation to provide or secure access and institutional controls, as well as to abide by such institutional controls pursuant to this Section (Environmental Covenant/Institutional Control Document), shall continue to be met by Respondent unless otherwise agreed to by the U.S. EPA and Illinois EPA in writing. In no event shall the conveyance or transfer of property interest release or otherwise affect the liability of Respondent to comply with all provisions of this Settlement Agreement unless otherwise agreed to among the Parties hereto in writing.
- b. The intent of Respondent is to record an Environmental Covenant that is applicable to each subsequent owner of the Site. The Environmental Covenant will apply to any portion of the Site that is not radiologically surveyed in 18-inch lifts or where any known

radioactive contamination will remain after completion of the Work. The Environmental Covenant shall provide the following:

- 1) subject to Paragraph 28, a restriction that "runs with the land" regulating on the disturbance of, exposure of or intrusion upon any portion of the Uninvestigated Site Area;
  - 2) the right to enforce said restrictions;
  - 3) a right of access to the Site;
  - 4) prior notice of disturbance, exposure, intrusion, or excavation of the soils in any portion of the Site that is not radiologically surveyed in 18-inch lifts or where any known radioactive contamination will remain; and
  - 5) an agreement that when soils are disturbed, exposed, intruded or excavated in the Uninvestigated Site Area, those activities are conducted in accordance with the Work Plan.
- c. The Respondent agrees that every subsequent deed or other instrument conveying or transferring a property interest in the Site or any portion thereof shall be subject to the Environmental Covenant.

28. U.S. EPA and Illinois EPA may terminate the restrictions in Paragraphs 26 and 27, in whole or in part, in writing, as authorized by law. If requested by the U.S. EPA and Illinois EPA, such writing will be executed by the Respondent in recordable form and recorded with the Recorder of Deeds, Cook County, Illinois. Respondent may modify or terminate the above restrictions in whole or in part, in writing, with the prior written approval of U.S. EPA and Illinois EPA. Respondent may seek to modify or terminate, in whole or in part, the restrictions by submitting to U.S. EPA and Illinois EPA, for approval, a written application that identifies each such restriction to be terminated or modified, describes the terms of each proposed modification and includes proposed revision(s) to the Environmental Covenant and institutional control document described in this Section X (Environmental Covenant/Institutional Control Document). Each application for termination or modification of any restriction shall include a demonstration that the requested termination or modification will not interfere with, impair or reduce protection of human health and the environment. If U.S. EPA, together with the Illinois EPA, determines that an application satisfies the requirements of this Paragraph, including the criteria specified above, U.S. EPA will notify Respondent in writing. If U.S. EPA does not respond in writing to a request to change land use within 90 days of its receipt of that request, unless Respondent agrees to extend this period beyond 90 days, U.S. EPA and Illinois EPA may be deemed to have denied the request. If a modification to or termination of restriction is approved, Respondent shall record the revised Deed Restriction as approved by U.S. EPA and Illinois EPA, with the Recorder of Deeds, Cook County, Illinois.

## **XI. ACCESS TO INFORMATION**

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

30. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to U.S. EPA under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by U.S. EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to U.S. EPA, or if U.S. EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent.

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

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

## **XII. RECORD RETENTION**

33. Until 6 years after Respondent's receipt of U.S. EPA's notification pursuant to Section XXVII (Notice of Completion of Work), Respondent shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 6 years after Respondent's receipt of U.S. EPA's notification pursuant to Section XXVIII (Notice of

Completion of Work), Respondent shall also instruct its contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to performance of the Work.

34. At the conclusion of this document retention period, Respondent shall notify U.S. EPA at least 60 days prior to the destruction of any such records or documents, and, upon request by U.S. EPA, Respondent shall deliver any such records or documents to U.S. EPA. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide U.S. EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or information; and 6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

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

### **XIII. COMPLIANCE WITH OTHER LAWS**

36. Respondent shall perform all actions required pursuant to this Settlement Agreement in accordance with all applicable local, state, and federal laws and regulations except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 6921(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-Site actions required pursuant to this Settlement Agreement shall, to the extent practicable, as determined by U.S. EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("ARARS") under federal environmental or state environmental or facility siting laws.

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

37. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer, Emergency Response Branch, Region

5 at (312) 353-2318, of the incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and U.S. EPA takes such action instead, Respondent shall reimburse U.S. EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Payment of Response Costs).

38. In addition, in the event of any release of a hazardous substance from the Site, Respondent shall immediately notify the OSC at (312) 353-2318 and the National Response Center at (800) 424-8802. Respondent shall submit a written report to U.S. EPA within 7 business days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

#### **XV. AUTHORITY OF ON-SCENE COORDINATOR**

39. The OSC shall be responsible for overseeing Respondent's implementation of this Settlement Agreement. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

#### **XVI. PAYMENT OF RESPONSE COSTS**

##### **40. Payment for Response Costs.**

- a. Respondent shall pay the U.S. EPA all Response Costs not inconsistent with the NCP. On a periodic basis, the U.S. EPA will send Respondent a bill requiring payment that consists of an Itemized Cost Summary. Respondent shall make all payments within 30 calendar days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 42 of this Settlement Agreement. Payment shall be made to the U.S. EPA by:
  - i. Electronic Funds Transfer (EFT) in accordance with current EFT procedures to be provided to Respondent by the U.S. EPA Region 5 and shall be accompanied by a statement identifying the name and address of the party making payment, the Lindsay Light II Site OU 14 name, and Site/Spill ID Number 05YT, and the U.S. EPA docket number for this action, or
  - ii. If the amount demanded in the bill is \$10,000 or less, Respondent may, in lieu of the procedures in subparagraph 39(a)(i), make all payments required by this Paragraph by official bank check made payable to "U.S. EPA Hazardous Substance Superfund." Each check, or a letter accompanying each check, shall identify the name and address of the party making payment, the Lindsay Light II Site OU 14 name, U.S. EPA Region 5, the Site/Spill ID Number 05YT, and, if any, the U.S. EPA docket number for this action, and shall be sent to:

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

U.S. Environmental Protection Agency  
Superfund Payments  
Cincinnati Finance Center  
P.O. Box 979076  
St. Louis, MO 63197-9000

- b. At the time of payment, Respondent shall send notice that such payment has been made to the Director, Superfund Division, U.S. EPA Region 5, 77 West Jackson Blvd., Chicago, Illinois, 60604-3590, to Mary L. Fulghum, Associate Regional Counsel, 77 West Jackson Boulevard, C-14J, Chicago, Illinois, 60604-3590, and to the U.S. EPA Cincinnati Finance Office by email at [acctreceivable.cinwd@epa.gov](mailto:acctreceivable.cinwd@epa.gov), or by mail to: Cincinnati Finance Office, 26 Martin Luther King Drive, Cincinnati, Ohio 45268. Such notice shall reference Site/Spill ID Number 05YT and the U.S. EPA docket number for this action.
- c. The total amount to be paid by Respondent pursuant to Paragraph 40 shall be deposited in the Lindsay Light Special Account within the U.S. EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Lindsay Light Site, or to be transferred by U.S. EPA to the U.S. EPA Hazardous Substance Superfund.

41. In the event that the payment for Response Costs is not made within 30 days of Respondents' receipt of a bill, Respondent shall pay Interest on the unpaid balance. The Interest on Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondents' failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XIX (Stipulated Penalties).

42. Respondent may dispute all or part of a bill for Response Costs submitted under this Settlement Agreement, only if Respondent determines that U.S. EPA has made mathematical error, or if Respondent believes the U.S. EPA incurred excess costs as a direct result of a U.S. EPA action that was inconsistent with a specific provision or provisions of the NCP. If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, Respondents shall pay the full amount of the uncontested costs to U.S. EPA as specified in Paragraph 40 on or before the due date. Within the same time period, Respondent shall establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation (FDIC), and remit to that escrow account funds equivalent to the amount of the contested Response Costs. Respondent shall simultaneously transmit a copy of both checks to the persons listed in Paragraph 40(b) above. Respondent shall ensure that the prevailing party or parties in the dispute shall receive the amount upon which that party prevailed from the escrow funds plus interest within 20 calendar days after the dispute is resolved.

## **XVII. DISPUTE RESOLUTION**

43. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

44. If Respondent objects to any U.S. EPA action taken pursuant to this Settlement Agreement, including billings for Response Costs, it shall notify U.S. EPA in writing of its objection(s) within 10 calendar days of such action, unless the objection(s) has/have been resolved informally. This written notice shall include a statement of the issues in dispute, the relevant facts upon which the dispute is based, all factual data, analysis or opinion supporting Respondent's position, and all supporting documentation on which such party relies. U.S. EPA shall provide its Statement of Position, including supporting documentation, no later than 10 calendar days after receipt of the written notice of dispute. In the event that these 10-day time periods for exchange of written documents may cause a delay in the work, they shall be shortened upon, and in accordance with, notice by U.S. EPA. The time periods for exchange of written documents relating to disputes over billings for response costs may be extended at the sole discretion of U.S. EPA. An administrative record of any dispute under this Section shall be maintained by U.S. EPA. The record shall include the written notification of such dispute, and the Statement of Position served pursuant to the preceding paragraph. Upon review of the administrative record, the Director of the Superfund Division, U.S. EPA Region 5, shall resolve the dispute consistent with the NCP and the terms of this Settlement Agreement.

45. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with U.S. EPA's decision, whichever occurs.

## **XVIII. FORCE MAJEURE**

46. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of Respondent, or of any entity controlled by Respondent, including but not limited to its contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

47. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify U.S. EPA orally within 24 hours of when Respondent first knew that the event might cause a delay. Within 7 calendar days thereafter, Respondent shall provide to U.S. EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of

the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a *force majeure* event if Respondent intends to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall be grounds for U.S. EPA to deny Respondent an extension of time for performance. Respondent shall have the burden of demonstrating by a preponderance of the evidence that the event is a force majeure, the delay is warranted under the circumstances, and best efforts were exercised to avoid and mitigate the effects of the delay.

48. If U.S. EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by U.S. EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If U.S. EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, U.S. EPA will notify Respondent in writing of its decision. If U.S. EPA agrees that the delay is attributable to a *force majeure* event, U.S. EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

#### **XIX. STIPULATED PENALTIES**

49. Respondent shall be liable to U.S. EPA for stipulated penalties in the amounts set forth in Paragraphs 50 and 51 for failure to comply with the requirements of this Settlement Agreement specified below, unless excused under Section XVIII (*Force Majeure*). "Compliance" by Respondent shall include completion of the activities under this Settlement Agreement or any work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of this Settlement Agreement within the specified time schedules established by and approved under this Settlement Agreement.

#### **50. Stipulated Penalty Amounts - Work.**

- a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 50(c) (i), ii, or iii:

<u>Violation Per Day</u>	<u>Period of Noncompliance</u>
\$100.00	1 <sup>st</sup> through 14 <sup>th</sup> day
\$250.00	15 <sup>th</sup> through 30 <sup>th</sup> day
\$500.00	31 <sup>st</sup> day and beyond

- b. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 50(c)(iv)(v) or vi:

<u>1st Violation- Per Day Penalty</u>	<u>Period of Noncompliance</u>
\$ 100.00	1 <sup>st</sup> day
\$ 200.00	2 <sup>nd</sup> day
\$ 300.00	3 <sup>rd</sup> through 5 <sup>th</sup> day
\$ 500.00	6 <sup>th</sup> through 15 <sup>th</sup>
\$ 1,000.00	16 <sup>th</sup> day and beyond

<u>2nd Violation- Per Day Penalty</u>	<u>Period of Noncompliance</u>
\$ 300.00	1 <sup>st</sup> day
\$ 600.00	2 <sup>nd</sup> day
\$ 900.00	3 <sup>rd</sup> through 5 <sup>th</sup> day
\$ 1,500.00	6 <sup>th</sup> through 15 <sup>th</sup>
\$ 3,000.00	16 <sup>th</sup> day and beyond

c. Compliance Milestones

- i. Payment of Response Costs due 30 days after the Respondent's receipt of U.S. EPA's billing statement.
- ii. Recording the Environmental Covenant within 30 calendar days after completion of all Work required by Section VIII of this Settlement Agreement.
- iii. Submit to U.S. EPA a draft map and a final revised map of the Uninvestigated Site Area in accordance with the Work Plan.
- iv. 72-hour advance notice of intrusive work in Uninvestigated Site Area as required in Paragraph 25.
- v. Failure to comply with the recorded Environmental Covenant/Institutional Control document described in Section X.

51. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or other written documents pursuant to Paragraphs 19 and 20:

<u>Violation Per Day</u>	<u>Period of Noncompliance</u>
\$1000.00	1 <sup>st</sup> through 14 <sup>th</sup> day
\$200.00	15 <sup>th</sup> through 30 <sup>th</sup> day
\$500.00	31 <sup>st</sup> day and beyond

52. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the

noncompliance or completion of the activity. However, stipulated penalties shall not accrue: 1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after U.S. EPA's receipt of such submission until the date that U.S. EPA notifies Respondent of any deficiency; and 2) with respect to a decision by the Director of the Superfund Division, Region 5, under Paragraph 44 of Section XVII (Dispute Resolution), during the period, if any, beginning on the 21st day after U.S. EPA submits its written statement of position until the date that the Director of the Superfund Division issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

53. Following U.S. EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, U.S. EPA may give Respondent written notification of the failure and describe the noncompliance. U.S. EPA may send Respondent a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether U.S. EPA has notified Respondent of a violation.

54. All penalties accruing under this Section shall be due and payable to U.S. EPA within 30 days of Respondent's receipt from U.S. EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures under Section XVII (Dispute Resolution). Respondent shall make all payments required by this Section by official bank check made payable to "U.S. EPA Hazardous Substance Superfund." Each check, or a letter accompanying each check, shall identify the name and address of the party making payment, the Lindsay Light II OU 14 name, U.S. EPA Region 5, the Site/Spill ID Number 05YT, and, if any, the U.S. EPA docket number for this action, and shall be sent to:

U.S. Environmental Protection Agency  
Superfund Payments  
Cincinnati Finance Center  
P.O. Box 979076  
St. Louis, MO 63197-9000

and shall indicate that the payment is for stipulated penalties, and shall reference the name and address of the party making payment. At the time of payment, copies of check paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to the U.S. EPA as provided in Paragraph 40(b).

55. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.

56. Penalties shall continue to accrue during any dispute resolution period, but need not be paid until 20 days after the dispute is resolved by agreement or by receipt of U.S. EPA's decision.

57. If Respondent fails to pay stipulated penalties when due, U.S. EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph

54. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of U.S. EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(l) of CERCLA, 42 U.S.C. §§ 9606(b) and 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that U.S. EPA shall not seek civil penalties pursuant to Section 106(b) or 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of this Settlement Agreement. Should Respondent violate this Settlement Agreement or any portion hereof, U.S. EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. §9604, and/or may seek judicial enforcement of this Settlement Agreement pursuant to Section 106 of CERCLA, 42 U.S.C. §9606. Notwithstanding any other provision of this Section, U.S. EPA may, in its unreviewable discretion, waive in writing any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

#### **XX. COVENANT NOT TO SUE BY U.S. EPA**

58. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, U.S. EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Response Costs. This covenant not to sue shall take effect upon receipt by U.S. EPA of the Response Costs due under Section XVI (Payment of Response Costs) of this Settlement Agreement and any Interest or Stipulated Penalties due for failure to pay Response Costs as required by Sections XVI and XIX of this Settlement Agreement. This covenant not to sue is conditioned upon the complete and satisfactory performance by Respondent of its obligations under this Settlement Agreement, including, but not limited to, payment of Response Costs pursuant to Section XVI. This covenant not to sue extends only to Respondent and does not extend to any other person.

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

59. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of U.S. EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement. U.S. EPA also reserves the right to take any other legal or equitable action as it deems appropriate and necessary, or to require the Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

60. The covenant not to sue set forth in Section XX above does not pertain to any matters other than those expressly identified therein. U.S. EPA reserves, and this Settlement Agreement

is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;
- b. liability for costs not included within the definition of Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments; and
- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site.

#### **XXII. COVENANT NOT TO SUE BY RESPONDENT**

61. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Response Costs, or this Settlement Agreement, including, but not limited to:

- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;
- b. any claim arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Illinois State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or
- c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Site.

These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 60 (b), (c), and (e) - (f), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

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

### **XXIII. OTHER CLAIMS**

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

64. Except as expressly provided in Section XX (Covenant Not to Sue by U.S. EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

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

### **XXIV. CONTRIBUTION**

66.

- a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Response Costs.
- b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which the Respondent has, as of the Effective Date, resolved its liability to the United States for the Work and Response Costs.
- c. Nothing in this Settlement Agreement precludes the United States or Respondent from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any persons not parties to this Settlement Agreement. Nothing herein diminishes the right of the United States, pursuant to Section 113(f)(2) and (3), 42 U.S.C. § 9613(f)(2) and (3), to pursue any such persons to obtain additional response costs or response action, and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2).

## **XXV. INDEMNIFICATION**

67. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States. The Federal Tort Claims Act (28 U.S.C. §§ 2671, 2680) provides coverage for injury or loss of property, or injury or death caused by the negligent or wrongful act or omission of an employee of U.S. EPA while acting within the scope of his or her employment, under circumstances where U.S. EPA, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred.

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

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

## **XXVI. MODIFICATIONS**

70. The OSC may make modifications to any plan or schedule in writing or by oral direction. Any oral modification will be memorialized in writing by U.S. EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the parties.

71. If Respondent seeks permission to deviate from any approved work plan or schedule, Respondent's Project Coordinator shall submit a written request to U.S. EPA for approval outlining the proposed modification and its basis. Respondent may not proceed with the

requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 70.

72. No informal advice, guidance, suggestion, or comment by the OSC or other U.S. EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

#### **XXVII. NOTICE OF COMPLETION OF WORK**

73. When U.S. EPA determines, after U.S. EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including, *e.g.*, post-removal site controls, payment of Response Costs, and record retention, U.S. EPA will provide written notice to Respondent. If U.S. EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, U.S. EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modifies the Work Plan if appropriate in order to correct such deficiencies. Respondent shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the U.S. EPA notice. Failure by Respondent to implement the approved modified Work Plan shall be a violation of this Settlement Agreement.

#### **XXVIII. NOTICES AND SUBMISSIONS**

74. Whenever, under the terms of this Agreement, notice is required to be given or a document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of this Agreement with respect to U.S. EPA and Respondent.

##### **As to U.S. EPA:**

Mary L. Fulghum  
Cathleen M. Martwick  
Associate Regional Counsel  
U.S. EPA (C-14J)  
77 W. Jackson Blvd.  
Chicago, Illinois 60604

Verneta Simon, P.E.  
On-Scene Coordinator  
U.S. EPA (SE-6J)  
77 W. Jackson Blvd.  
Chicago, Illinois 60604

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

Gene Jablonowski  
Project Manager  
U.S. EPA (SR-6J)  
77 W. Jackson Blvd.  
Chicago, Illinois 60604

Vanessa Mbogo  
Comptroller's Office  
U.S. EPA (MF-10J)  
77 W. Jackson Blvd.  
Chicago, Illinois 60604

As to Respondent:

Lee Golub  
GHB-630 LLC  
625 N. Michigan Ave, Suite 2000  
Chicago, IL 60611

Daniel Swartzman  
DiVincenzo Schoenfield Swartzman  
33 N. LaSalle, Suite 2900  
Chicago, IL 60602

John Yang  
RSP GaiaTech  
135 S. LaSalle, Suite 3500  
Chicago, IL 60603

#### **XXIX. SEVERABILITY/INTEGRATION/EXHIBIT**

75. If a court issues an order that invalidates any provision of this Settlement Agreement or finds that Respondent has sufficient cause not to comply with one or more provisions of this Settlement Agreement, Respondent shall remain bound to comply with all provisions of this Settlement Agreement not invalidated or determined to be subject to a sufficient cause defense by the court's order.

76. This Settlement Agreement and its Exhibits constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following Exhibit is incorporated into this Settlement Agreement:

Exhibit A Site Map.

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

**XXX. EFFECTIVE DATE**

77. This Settlement Agreement shall be effective upon signature of this Settlement by the Director, Superfund Division, U.S. EPA Region 5.

The undersigned representative of Respondent certifies that s/he is fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the party s/he represent to this document.

Agreed this 25<sup>th</sup> day of June, 2014.

For Respondent: **GHB-630 LLC**

By: \_\_\_\_\_

(Print Name) \_\_\_\_\_

Title \_\_\_\_\_

EVP

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

IN THE MATTER OF:

Lindsay Light II, OU 14  
401 East Ohio Street  
Chicago, Illinois

It is so ORDERED and Agreed this 30 day of JUNE, 2014.

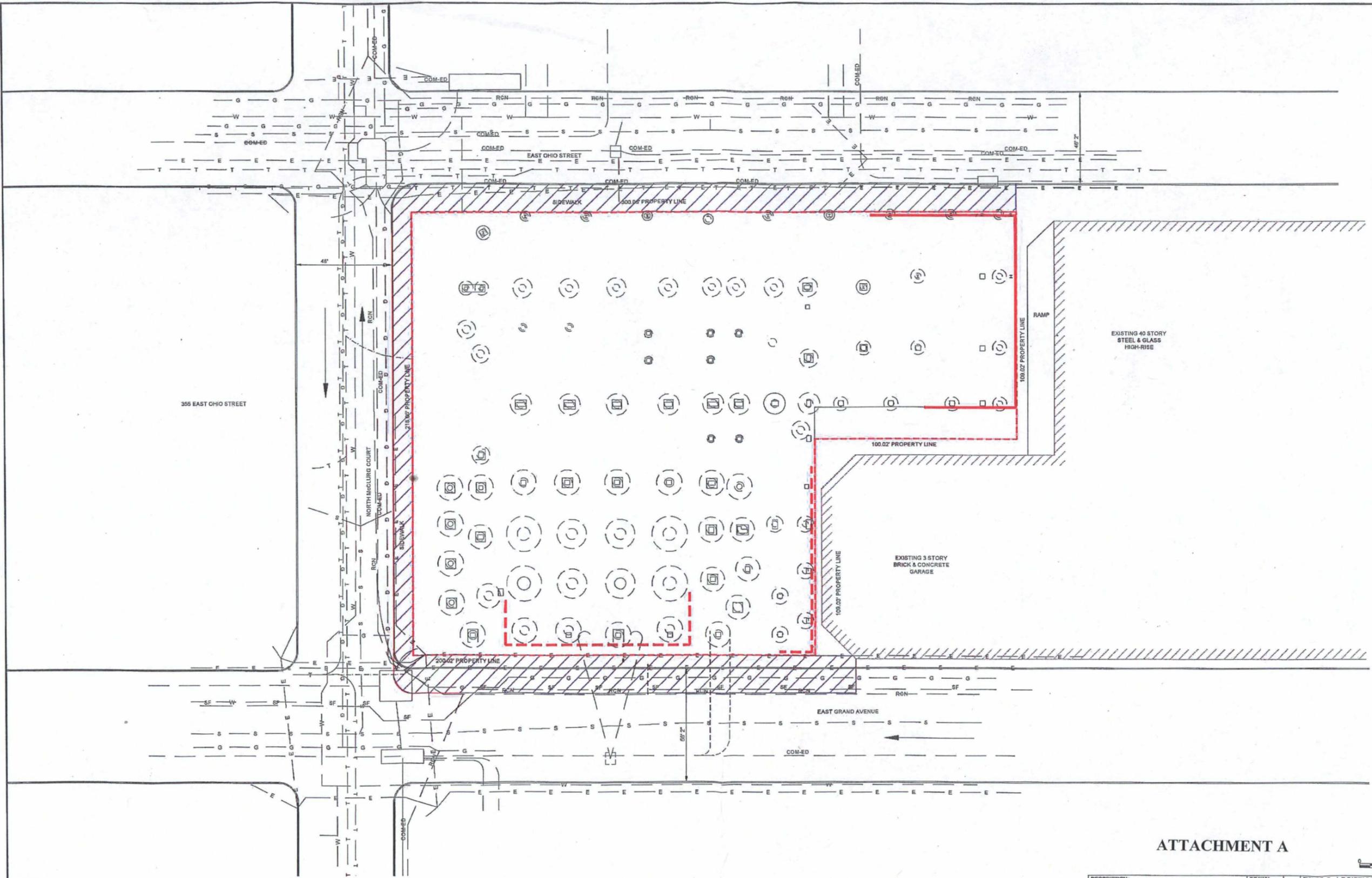
BY:



Richard C. Karl, Director  
Superfund Division  
United States Environmental Protection Agency  
Region 5

Lindsay Light II OU 14, 545 N. McClurg Ct.  
Admin. Settlement Agreement and  
Order on Consent for Removal Action

**EXHIBIT A**  
**SITE MAP**



**LEGEND**

- PROPERTY LINE
- SHEETING AT PROPERTY LINES ONLY
- CAISSON LOCATIONS SURVEYED THROUGH FILL MATERIALS
- AREA OF ROW/STREET CLOSED DURING SITE EXCAVATION ACTIVITIES

**ATTACHMENT A**

0 10 20 FEET

DESCRIPTION: GHB 630, LLC. 545 NORTH McCLURG COURT CHICAGO, IL	DRAWN: CS	FIGURE 9 LOGISTICS PLAN PROPOSED ROW/SIDEWALK AND STREET AREA CLOSURES 
	SCALE:	
	GRAPHIC DATE:	
	8/17/12	
FILE: A8012-400-1		



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

March 26, 2014

REPLY TO THE ATTENTION OF

SE-5J

Mr. John Yang  
GaiaTech  
135 South LaSalle Street, Suite 3500  
Chicago, Illinois 60603

R: 545 North McClurg Court (AKA 410 East Grand) Soil Screening and Soil Management  
Work Plan dated March 14, 2014

Dear Mr. Yang

As you requested, USEPA has reviewed the above referenced work plan and considers it approved. Please notify me and Gene Jablonowski by email and telephone 48 hours before you begin radiological surveying.

If you would like to further discuss any issue, please contact me at (312) 886-3601, or Eugene Jablonowski, Superfund Health Physicist at (312) 886-4591, and direct legal inquiries to Mary Fulghum, Associate Regional Counsel at (312) 886-4683 or Cathleen Martwick, Associate Regional Counsel at (312) 886-7166.

Sincerely,

/s/ *Verneta Simon*

Verneta Simon, P.E.  
On-Scene Coordinator

**THORIUM SCREENING INVESTIGATION AND  
SOIL MANAGEMENT WORKPLAN – EXCAVATION/TRENCHING FOR  
SITE PREPARATION AND FOUNDATION CONSTRUCTION**

**545 North McClurg Court  
Chicago, Illinois**

**Prepared for**

**GHB-630, LLC  
Chicago, Illinois**

**Prepared By**

**GaiaTech Incorporated**

**March 14, 2014**

**GAIA TECH PROJECT NO. 122131.400.1**

## TABLE OF CONTENTS

	<b>PAGE</b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Background.....	2
1.2 Summary of Previous Radiation Surveying and Sampling.....	3
1.3 Site Geology.....	6
<b>2.0 PERMITS.....</b>	<b>7</b>
<b>3.0 REFERENCED DOCUMENTS AND USEPA MEETING.....</b>	<b>8</b>
3.1 Referenced Documents.....	8
3.2 USEPA Preliminary Meeting.....	8
<b>4.0 LIST OF CONTRACTORS AND CONSULTANTS.....</b>	<b>9</b>
<b>5.0 INSTRUMENT CALIBRATION.....</b>	<b>10</b>
<b>6.0 PHASE I - PRE-CONSTRUCTION ACTIVITIES.....</b>	<b>11</b>
6.1 General Soil/Fill Screening.....	11
6.1.1 General Procedures for Asphalt Pavement, Concrete Foundations and Rubble...	12
6.1.2 General Procedures for Surface Soil Screening.....	12
6.2 General Excavation Guidelines.....	13
6.3 Proposed Onsite Construction Activities.....	15
6.3.1 Sheet Piling, Frost Walls and Elevator Pits.....	15
6.3.2 Caissons and Grade Beams.....	16
6.3.3 Onsite Utilities.....	16
6.3.4 Other Miscellaneous Excavations.....	16
<b>7.0 PHASE II - SCREENING DURING CONSTRUCTION OFFSITE.....</b>	<b>17</b>
7.1 General Procedures for ROW and Street Soils.....	17
7.2 Proposed Construction activities in the ROW.....	18
7.2.1 Concrete Sidewalk Removal.....	19
7.2.2 Utility Installation.....	19
7.2.3 Installation of Landscaping Planter Areas.....	20
7.3 Street Utility Installation.....	20
<b>8.0 RADIOLOGICALLY CONTAMINATED SOIL HANDLING &amp; DISPOSAL.....</b>	<b>21</b>
<b>9.0 HEALTH &amp; SAFETY PLAN.....</b>	<b>22</b>
<b>10.0 AIR MONITORING.....</b>	<b>23</b>
<b>11.0 THORIUM CONFIRMATION AND VERIFICATION SAMPLING.....</b>	<b>24</b>
<b>12.0 NON-RADIOLOGICALLY CONTAMINATED SOIL DISPOSAL.....</b>	<b>27</b>
<b>13.0 NEW IMPORTED BACKFILL MATERIALS.....</b>	<b>28</b>

### Figures

- Figure 1 Site Location Map  
Figure 2 Former Boring Location Map with Fill Depths  
Figure 3 Site Plan with Proposed Foundation Structures  
Figure 4 Site Plan with Proposed Onsite Radiological Screening Depth Zones

## **Appendices**

- Appendix A 2008 Surface Survey Results - STS/AECOM
- Appendix B 2009 Phase II Soil and Groundwater Laboratory Results
- Appendix C 2012 Downhole Survey Results - GaiaTech
- Appendix D 2009 Phase II and 2012 Geotechnical Boring Logs
- Appendix E Calibration Forms for Field Survey Instruments
- Appendix F Excavation and Backfilling Procedures with Chicago Office of Underground  
Coordination (Excavation Cross-sections)
- Appendix G Health and Safety Plan

## 1.0 INTRODUCTION

GHB-630, LLC (GHB-630) retained GaiaTech Incorporated (GaiaTech) to prepare this Thorium Screening Investigation and Soil Management Workplan (the "Workplan") to be used for excavation/trenching activities for site preparation and foundation construction of the site at located at 545 North McClurg Court (formerly known as 410 East Grand Avenue) in Chicago, Cook County, Illinois (the "Site" or "Subject Property"). The 1.2 acre Site is currently developed with an asphalt paved parking lot and has been proposed for redevelopment with a multistory mixed use building. The location of the Site is depicted on Figure 1.

Previous work in the general vicinity of the Site (i.e., the Streeterville Investigation Area) has indicated the presence of fill materials which exhibited impact by thorium in excess of the United States Environmental Protection Agency (USEPA) Action Limit of 7.1 pCi/gram (pCi/g). The purpose of the Workplan is to document the protocols, techniques and methodologies to be implemented, prior to and during the proposed construction activities, in order to screen and manage fill/spoils on the Site and in selected areas of the adjacent Right-of-Way (ROW) and street where excavation or trenching related to the pending site redevelopment may occur. The Workplan proposes conducting a radiological survey of the Site surface, followed by additional selective surveying of the locations of proposed foundation structures. Thorium impacted fill that could be encountered/disturbed/handled during general construction activities will then be removed and disposed of properly prior to building construction. Similar Workplans (prepared by GaiaTech) were previously reviewed and commented on by the USEPA for use during redevelopment of the nearby properties (345 East Ohio Street, Chicago/Streeter I and 355 East Ohio Street, Chicago/Streeter II). These prior Workplans were prepared and approved in 2004 and 2006, respectively. Similar project procedures and screening techniques, as established in the prior Workplans, will be used on this Site.

It should be noted that this Workplan is not considered a Remedial Action Plan. Rather, it is limited to establishing verification sampling and soil removal protocols and procedures that are considered necessary to 1) be protective of construction worker safety, and 2) provide for proper management of excavated soils. The goal is to implement this Workplan before construction of the proposed mixed-use development so that the Site will not present undue risk to the Health and Safety of construction workers (i.e., no special procedures or environmental oversight will be required during construction with respect to radiological impact) and to avoid the unwanted disturbance of potential radiologically-contaminated fill. GHB-630, LLC is the current owner of the Subject Property. Previous work in the Streeterville Investigation Area has indicated that the thorium impact is primarily found in the near surface urban fill materials. For purposes of this Workplan the terms soil and fill are used interchangeably but generally refer to the near surface urban fill materials found throughout the Site and surrounding vicinity.

Previous downhole logging conducted in 2008 and 2012 and surface screening conducted in 2008 at the Site did not identify areas or samples with confirmed thorium contamination in excess of the USEPA Action Limit of 7.1 pCi/g. Nevertheless, follow-up surveying of the surface soils/urban fill materials and locations of the proposed foundation structures will be completed to determine if the onsite urban fill materials are radiologically contaminated. If urban fill materials are determined to be radiologically contaminated, the onsite areas will be

designated for later removal and disposal prior to general construction activities. If thorium contamination is found to exist beyond the designated areas noted for surveying these areas will not be disturbed or removed.

Other potential areas include the City of Chicago owned right-of-way (ROW) along Grand Avenue, Ohio Street and McClurg Court. The area outside the Site perimeter/property line will be designated as the ROW and street area for purposes of discussion within this Workplan. The fill/soils in the ROW and street will also be screened in 18-inch lifts as necessary to make the area safe for future construction activities.

This Workplan discusses two phases to the surface/subsurface screening activities. The first Phase will occur prior to construction activities at the Site, while the second Phase screening activities will occur during construction activities. Phase I will include the initial screening of the surface fill after the removal of the onsite asphalt pavement and follow-up screening of the subsurface fill in selective zones and deeper areas (potholing for caissons). These areas include proposed excavations related to the installation of various subgrade structures such as sheet piling installation, caisson drilling, utility installation, subgrade structure removal, frost walls, elevator pits and grade beams. Phase II will include surveying of those ROW areas adjacent to the Site, specifically in those areas where proposed construction activities will occur, including sheet piling, utilities, driveways and planter areas. Also included in Phase II will be the surveying of areas where utilities will be installed in the street areas adjacent to the Site.

## 1.1 Background

The 1.2-acre Site is currently developed with an asphalt paved parking lot. The Site is bounded by McClurg Court to the west, Grand Avenue to the south, Ohio Street to the north and a parking structure/residential high rise to the east (Figure 1).

The current Site consists of five contiguous parcels with the overall dimensions of 300-feet by 218-feet. The Site is currently known as 545 North McClurg Court, but may be noted in previous reports as being part of one or more of the following parcels:

17-100211-008 – 410 East Grand Avenue  
17-100211-009 – 414 East Grand Avenue  
17-100210-012 – 401 East Ohio Street  
17-100211-015 – 411 East Ohio Street  
17-100211-017 - 415 East Ohio Street

According to various historical sources, the Site and surrounding area were historically located within Lake Michigan. Various fill materials were used to fill in this portion of the lake and raise the grade of the area in the late 1890s and early 1900s. The Site was then initially developed between 1906 and 1927 with a building of unknown use. Between 1927 and 1950, the Site was redeveloped with structures occupied by Callaghan and Company Book Bindery, Wholesale Growers and a restaurant/bakery. Between 1953 and 1974, the Rehabilitation Institute of Chicago (RIC) became the owner and occupant of the former on-site buildings. RIC reportedly utilized the building located at 410-414 East Grand

Avenue as a training center. Between 1974 and 1988, the Site buildings were removed and the Site was developed into the current parking lot. RIC owned the Site until 2009, when it was sold to GHB-630, LLC; the current owner of the Subject Property.

From the 1900's through the 1930's, Lindsay Light and Chemical (Lindsay Light) operated a gas light mantle facility in the Streeterville area (Note: This facility was not located on the Subject Property). Lindsay Light's operations included the extraction of thorium ore in the manufacturing process. The process resulted in the generation of unknown quantities of thorium contaminated tailings and associated waste/debris materials. These tailings and debris materials were reportedly subsequently used as "fill" at various properties throughout the general Streeterville area, including at properties near the subject Site. The potential exists that some radiologically impacted fill materials may also be present at the subject Site.

The USEPA and the City of Chicago have established a special area as the "Streeterville Thorium Investigation Area", the designated Moratorium Area. The Moratorium Area is comprised of public Right-Of-Ways, streets and properties that are known or have a potential to be contaminated with thorium. The Subject Property is within the designated Moratorium Area. The USEPA requires the screening (for potential thorium contamination) of the urban fill materials being disturbed at properties located within the Moratorium Area. The screening is to be conducted in approximate 18-inch lifts and is discussed further in this Workplan.

## 1.2 Summary of Previous Radiation Surveying and Sampling

2008 Surface Radiation Survey: STS/AECOM completed a surface survey of the Site in 2008. The Site was set up with a 5 x 5 meter survey grid, except in two locations where parked cars could not be moved. The survey collected readings at each nodal point, as well as at intermediate areas. The survey utilized the gamma detection meter Ludlum Model 2221 with the sodium iodide (NaI) 2 x 2 inch unshielded 44-10 probe. Maximum field screening measurements were compared to the established unshielded instrument cutoff value of 18,073 counts per minute (cpm). This cutoff value has been correlated with the USEPA cleanup threshold/Action Level of 7.1 pCi/g of total radium for thorium impacted soil/fill in the Streeterville Thorium Investigation Area. The report indicates that none of the readings observed during the completion of the surface survey exceeded the instrument's threshold limit/USEPA Action Level. The results of the surface survey are included as Appendix A.

2009 Phase II Investigation: A Phase II investigation was conducted by STS/AECOM at the Site in November 2009. Part of the investigation included the screening of soil samples and soils generated during the boring process. The investigation included the installation of 16 soil borings, with three of the borings being converted to temporary well points to provide for the collection and analysis of Site groundwater samples for selected chemical constituents. Four of the 16 borings could not be advanced beyond 2 feet in depth, due to the presence of relatively shallow building foundation structures. The other 12 borings may not fully penetrate the fill materials.

Individual soil samples collected via split spoon sampler, as well as the spoils produced from the drilling process, were surveyed with a Ludlum 2221 meter and 2 x 2 inch unshielded NaI 44-10 probe. Readings obtained from the soil drilling spoils and sample spoons ranged from 5,100 to 7,700 cpm, which were reportedly well within the established background concentrations of the Site. The survey of the shallow fill did not indicate the presence of materials exhibiting evidence of radiological impact in excess of the USEPA Action Level of 7.1 pCi/g.

Several soil and groundwater samples were also collected from the soil borings for chemical analysis of selected constituents, including the following: volatile organic compounds (VOCs), semi-VOCs (SVOCs), pesticides and eight Resource Conservation and Recovery Act (RCRA) metals. The laboratory results indicated that the fill materials exhibited concentrations of various constituents, including: polynuclear aromatic hydrocarbons (PNAs) and total lead. Various samples indicated PNA and lead concentrations exceeding one or more of the residential, construction worker and/or commercial criteria established under the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) regulations (35 Illinois Administrative Code [IAC] Part 742). Tables and analytical reports from this report are included as Appendix B. The locations of the 2009 borings are shown on Figure 2.

2012 Geotechnical Investigation and Downhole Radiation Survey: An additional radiological survey of the Site soils was conducted concurrently (by GaiaTech) during a geotechnical study in 2012. A total of six geotechnical borings (B-1 through B-6) were advanced by GEI Consultants between March 13 and 21, 2012. The location and placement of each boring was predetermined by the geotechnical engineering company. As needed, boring locations were adjusted to bypass existing impenetrable concrete structures such as pile caps, caissons or other large foundation structures.

During this work, GaiaTech and its subcontractor, Radiation Safety Services, Inc. (RSSI), performed a subsurface survey for evidence of potential radiological impact to the fill materials at the Site. This included an assessment of drilling spoils, split spoon soil samples and downhole logging. The survey was conducted by a field technician utilizing a Ludlum Model 193 or 2200 meter with 2 x 2 NaI probe/gamma detectors. The field technician was under the direction of a certified health physicist, with oversight by a GaiaTech engineer.

The soil borings were initially drilled using a flight auger or a hollow stem auger (HSA) and followed up with a direct push probe with a split spoon sampler attachment. Generally, fill materials were encountered extending to depths between 15 and 20 feet bgs. Native soils encountered below the fill materials were observed to consist of gray to brown sand or brown/gray silty sand materials. Groundwater was encountered within the fill material at a depth of approximately 12 to 14 feet bgs.

The downhole gamma logging survey was conducted at five of the six boring locations (except B-4) to further evaluate fill materials above the water table (to protect the survey instrument from water damage). For the downhole survey, a 3-inch diameter schedule 40

PVC casing was installed into the borehole and, if a HSA was used, the auger was removed to facilitate downhole logging for thorium impact. After the installation of the casing, surveying was accomplished by lowering the survey meter to the bottom of the casing and slowly raising the meter and recording the readings in a field notebook. Readings were collected at approximate 1-foot intervals using a 1-minute time interval to obtain stable meter readings. If no elevated readings were noted, the casing was pulled from the hole for reuse. The remaining fill materials below the water table were screened directly from the split spoon samples collected for geotechnical purposes. The borehole was then sealed with grout to near the surface. Soil cuttings were placed in the top layer of the borehole and the hole was patched with asphalt.

Two gamma meters were utilized for the survey. The downhole survey was performed utilizing a Ludlum Model 2200 meter with an unshielded Ludlum Model 44-10 (2 x 2) thallium doped NaI gamma scintillation detector/probe. The split spoons were surveyed with a Ludlum Model 193 with a Ludlum Model 44-10 (2 x 2) shielded probe.

Prior to the survey, the site specific background level was established. The Ludlum 2200 established a downhole background level of 2,612-3,825 cpm, while the Ludlum 193 established a background level of between 2,000-3,000 cpm for surface surveying. If field screening readings were noted at levels three (3) or more times in excess of the general background conditions, a subsurface soil sample was collected by drilling a boring immediately adjacent to the suspect boring location and advancing it to just above the depth of the suspect reading. A split-spoon sampler was then advanced to include the depth interval that corresponded to the elevated reading. A soil sample was then retrieved from the sampler by the RSSI field technician, placed in a laboratory supplied container, transported under chain-of-custody procedures and analyzed at RSSI Laboratories in Morton Grove, Illinois. Soil cuttings generated during the drilling process from the suspect boring location were checked for elevated readings before returning them to the borehole. The soil cuttings did not exhibit evidence of radiological impact above background conditions.

The field screening readings of the split spoon samples were also noted to be within or below the established background levels. Downhole field screening readings were higher than the split spoon sample readings. However, only one location, B-6 at the 3-4 foot interval, indicated a reading in excess of 10,000 cpm, which was about 3 times greater than background. The elevated reading was encountered immediately beneath a 1-foot thick subsurface concrete structure (possibly an old foundation or floor). Confirmatory soil sampling was then completed immediately adjacent to the suspect boring location, in order to confirm the presence of soil impact. The results of the laboratory analyzed sample indicated that the sample contained less than 1 pCi/g, which is below the U.S. EPA Action Level of 7.1 pCi/g. Based on the analytical results, there is no evidence of thorium impacts above the USEPA Action Level at the borehole locations. The survey and analytical results are included as Appendix C. The locations of the 2012 borings are shown on Figure 2.

### 1.3 Site Geology

Previous soil borings installed at the Site in 2009 and 2012 for a Phase II and geotechnical investigation, encountered fill materials extending to approximate depths of between 12 and 20 feet bgs. The fill was observed to be composed of cinders, slag, sand, gravel, glass and metal pieces. The fill materials were underlain by native soils consisting of gray silty sand or gray to brown sand, to a depth of approximately 33 feet bgs. Underlying this unit was a gray silty clay unit from approximately 33 to 85 feet. Underlying this unit is a hardpan clay unit, with bedrock found at a depth of approximately 120 feet bgs. Bedrock was observed to be composed of dolomite. The boring logs from the 2009 and 2012 investigations are included as Appendix D.

Groundwater was encountered at the Site at a depth of approximately 12 to 14 feet bgs during the installation of the geotechnical borings in 2012. Previous measured groundwater levels from temporary well points collected during the Phase II Investigation in 2009, indicated water levels of 12.9 to 13.5 feet bgs, consistent with the 2012 investigation.

## 2.0 PERMITS

Necessary permits and sign-offs will be secured prior to the commencement of excavation activities onsite or in the ROW. Permits and sign-offs for work may include but are not limited to the following:

- Foundation permit; (Under General Contractor when the development plan is finalized)
- Excavation permit; (Under General Contractor when the development plan is finalized)
- Department of Environment Form No. DOE\_ROW.01
- Board of Underground Review
- Street closure/sidewalk closure permit;
- Consultation with Department of Transportation;
- Meetings with utilities; and
- Consultation with the Chicago Department of Public Health

If screening work on the site is scheduled during the Christmas Holiday time, the City of Chicago maintains a moratorium against performing intrusive work in the streets and sidewalk areas located within the Central Business District from mid-November 2013 through January 2, 2014. Proposed radiological surveying on city owned property will have to be scheduled accordingly.

### 3.0 REFERENCED DOCUMENTS AND USEPA MEETING

#### 3.1 Referenced Documents

Previous radiological surveying has been completed at the Site in 2008, 2009 and 2012 as previously described. Relevant sections of the reports with surveying counts and locations of the survey areas are attached for reference. The referenced reports are listed below:

- *Preliminary Findings for Surface Gamma Radiation Survey, 401 East Ohio Street, Chicago, Illinois*, prepared by STS/AECOM, July 7, 2008 (revised September 3, 2008). (Surface walkover survey report, Appendix A)
- *Phase II Environmental Assessment, 401 to 415 East Ohio Street and 410 to 414 East Grand Avenue, Chicago, Illinois*, prepared by STS/AECOM, November 2009. (Soil sample and drilling spoil surveying, tables and soil analytical and reports included as Appendix B, boring logs in Appendix D).
- *Radiation Screening Summary Report – Geotechnical Exploration Oversight, 410 East Grand Avenue, Chicago, Illinois*, prepared by GaiaTech, Inc., March 2012. (Downhole and soil sample surveying summary in Appendix C, boring logs in Appendix D)

In addition to the practices and procedures outlined in this Workplan, the following activities will also be conducted in accordance with similar approved activities/procedures previously reviewed by USEPA for nearby properties (345 and 355 East Ohio Street, Chicago – i.e. 341 East Ohio) including procedures for:

- Gamma radiological surveying
- Soil stockpile sampling (If required, although no stockpiling is anticipated).
- Equipment calibration
- Personal air monitoring
- Decontamination procedures for equipment potentially contaminated with radiologically contaminated soils.

#### 3.2 USEPA Preliminary Meeting

On May 23, 2012 a meeting was held at GaiaTech's office between USEPA representative Mr. Eugene Jablonowski, and representatives of Golub & Company and GaiaTech. The meeting focused on a discussion of the survey plans for the Site. The general approaches and procedures described in this plan were presented and discussed during the meeting. The USEPA indicated that the proposed approach appeared to be reasonable, pending review of the work plan.

#### 4.0 LIST OF CONTRACTORS AND CONSULTANTS

The following contractors/consultants will be involved with the project:

GaiaTech, Inc. - Overall project planning, permitting, onsite coordination, USEPA submittals, coordination and project management.

Qualified Subcontractor for Soil Screening and Laboratory services – Qualified subcontractor (contracted by GaiaTech) will be providing additional technical assistance and experienced screening technicians and/or certified health physicists. The contractor will also provide personnel monitoring services and collect samples for follow-up analysis, as necessary. Qualified subcontractor to GaiaTech will also be providing laboratory and/or air monitoring services, as necessary. Laboratory services (if required) will include analysis of samples by NUTRANL or another USEPA approved method that utilizes performance evaluation (PE) samples provided by USEPA. In some cases, Gamma Spectroscopy will also be used as appropriate. As of the date of this Workplan, the Qualified Subcontractor is assumed to be RSSI.

Soil Screening Excavation Contractor - Qualified removal contractor (subcontracted to GaiaTech/the owner) will provide excavation equipment, operators and laborers as necessary during screening, trenching and remedial activities.

GaiaTech/Owner - Will be providing waste containers, logistics, monitoring, transportation and disposal of radiologically impacted waste generated during onsite and ROW activities (if necessary).

General Construction Contractor - The General Contractor for the proposed building construction will not be involved in the soil screening or removal activities. The building construction work will not proceed until after the on-site areas proposed for excavation have been screened. The General Contractor will not be allowed to operate in the area where screening or remedial activities are being conducted. Contractor may obtain general ROW and street permits for the specific use of GaiaTech and Radiological surveillance personnel and contractors.

## 5.0 INSTRUMENT CALIBRATION

Soil surveys will be conducted with a calibrated hand-held gamma-ray detector, such as the Ludlum Model 2200 Rate Meter-Scaler with 44-10, 2 x 2 inch NaI probe (unshielded and shielded) or Model 193 with the same probe. Calibration of the Ludlum instrument(s) will also be conducted for the probe that utilizes both a long and short cord; cord length can influence the response of the instrument and the corresponding threshold limit on the instrument. Threshold limits will be provided for comparison for each cord length. Each gamma meter/probe will be calibrated using calibration blocks from the former Tronox facility in West Chicago, Illinois.

Example calibrations sheets for instruments such as the Ludlum Model 193 and 2200 with a 2 x 2 sodium iodide probe are attached in Appendix E (SOP for instrument calibration). Calibration of the instrument will be conducted with USEPA personnel present or with their consent. A form will be completed with the survey results and will contain location, type of instrument, serial number, person doing the measurement, date and time of measurement. Each instrument will have a serial number and calibration results from the former Tronox facility.

## 6.0 PHASE I - PRE-CONSTRUCTION ACTIVITIES

During previous Site investigations, the onsite surface and subsurface fill had been evaluated for potential radiological impact through a surface survey and with numerous subsurface borings, respectively. To date, no evidence of confirmed radiological impact, exceeding USEPA Action Levels, has been identified at the Site. Nevertheless, since the Site has not been fully surveyed in 18-inch lifts, the potential still exists for radiologically impacted fill materials to be present that could pose a risk to construction workers. Therefore, the subsurface fill materials will be surveyed prior to construction activities. The screening of subsurface soils will be conducted in those areas identified for planned subsurface work. For purposes of this Workplan, the planned onsite subsurface construction activities include (but are not limited to) the installation of steel sheet piling and excavations related to caissons, grade beams, utilities, frost walls, storm water control features, elevator pits, etc. The proposed locations and depths of the various onsite excavations are illustrated on Figures 3, 4 and Appendix F. In addition, the surface soils on the Site will also be surveyed in accordance with this Workplan.

Subsurface screening/surveying is not proposed in other areas that are not planned for excavation or subsurface construction activities. However, if future changes in construction plans include subsurface activities in areas that have not been assessed these activities will not be conducted until such time that the proposed excavation areas have been screened in accordance with the procedures outlined in this Workplan.

Screening at the Site will be completed in two Phases. The first Phase, Phase I, will include surveying activities associated with both surface soils/fill and subsurface fills of the Subject Property prior to construction activities. The onsite activities will occur during the removal of the asphalt pavement but prior to other on-site general subsurface construction activities (i.e., those activities which could potentially cause the disturbance of, or potential worker exposure to, soils/fill that could potentially be contaminated with thorium). Pre-construction screening activities will include those areas on the Site planned for subsurface construction activities, as well as a general reconnaissance of surface fills/soils.

The second phase (Phase II, Section 7.0) will be completed during onsite construction activities and will include surveying in selected off-site areas (the ROW and street areas). Offsite screening in the ROW will be conducted first and street areas will be conducted concurrent with utility installation.

### 6.1 General Soil/Fill Screening

Prior to the commencement of subsurface construction work, either onsite or later within the ROW/street areas (see Section 7.0), an on-site field technician, under the direction of a certified health physicist (who may not be on-site), will conduct the field screening for the purpose of surveying those soils/fill to be excavated for the presence of radiological contamination. Soil surveying will be conducted with a calibrated Ludlum Model 2200 (Rate Meter-Scaler with 44-10, 2 x 2 inch NaI probe - unshielded and shielded) or Model 193 with the same probe. Calibration of the instruments is described in Section 5.0 with examples attached in Appendix E.

### *6.1.1 General Procedures for Asphalt Pavement, Concrete Foundations and Rubble*

Although the Site surface has been previously surveyed<sup>1</sup>, asphalt pavement can shield the underlying soils from effective surveying. After the removal of the asphalt pavement, the surficial fill/soils under the pavement will be re-surveyed. If impacted surface fill are noted this could be indicative of potentially impacted pavement.

During the removal of the pavement, the underside of the pavement and underlying soils will be screened. If the concrete or asphalt has a rough texture, attempts will be made to survey the corresponding indentations to provide adequate coverage of the material with the survey instrument. If the initial survey indicates readings are below the screening level correlating to the action level threshold of 7.1 pCi/g, the rubble will be considered clean and disposed as construction debris. If the indicated readings are equal to or above the screening level correlating to the action level threshold of 7.1 pCi/g, the rubble/pavement will be broom cleaned to remove obvious adhering soil and resurveyed. The broom used to clean off the contaminated soil will be disposed of with the soil. If the re-survey indicates that the material has been decontaminated, the rubble/pavement will be disposed as construction debris. If the re-survey indicates that the material has not been decontaminated, the rubble/pavement will be disposed as thorium contaminated in accordance with Section 8.0.

### *6.1.2 General Procedures for Surface Soil Screening*

Surveying for pre-construction will include a general reconnaissance (surface screening) and additional subsurface screening in those areas proposed for new construction elements (e.g., foundations, storm water control, utilities, etc.). After the pavement has been removed, GaiaTech and the radiological technician will conduct a survey of the surficial fill at the Site. The survey will be conducted by first setting up a 5-meter grid across the Site. Nodal points for the intersection of the grids will be painted and numbered for reference. Readings will be collected at each nodal point by placing a Ludlum 2200 meter and shielded gamma probe (as described earlier) on the ground surface at the nodal point and allowing the reading to stabilize for 1 minute prior to collecting the meter reading. Meter readings will then be recorded in a field notebook for compilation in a report. The areas between each nodal point will also be surveyed by a walkover survey to assess for additional areas that may have a potential to be in excess of the threshold limit.<sup>2</sup>

If a reading is found to be at or above the screening threshold limit established for the survey meter that corresponds to the action threshold of 7.1 pCi/g, the nodal or area of screened surface soils/fill will be designated as a "Hot Zone" and staked/marked for future investigation/remediation. The surficial soils will remain in place until the surface

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<sup>1</sup> Note: Based on the previous site wide survey by STS/AECOM in 2008, the data does not suggest the presence of radiological impact to the asphalt pavement materials.

<sup>2</sup> Depending on the project timeline, an alternative method may be implemented to conduct the initial survey of surficial soils. If implemented, this would include conducting the survey as the pavement is removed.

screening is complete.

Upon discovery of elevated field measurements, the USEPA will be notified. On the direction of the USEPA, a soil sample will be collected for quantification of the isotopes. (See section 11.0 for sampling methods). The soil sample will be analyzed at RSSI's laboratory in Morton Grove, Illinois or other qualified laboratory. The "hot spot" areas of the surface soil/fill contaminated with thorium will be covered by plastic sheeting and isolated with barricades and tapes. If plastic sheeting is not practical, the area will be wetted with water as a dust suppressant. If additional wetting is needed, the application of water and/or an environmentally friendly dust suppressant will be applied. MSDS sheets will be provided to US EPA prior to the application of the amended water. Radiologically contaminated soils, if excavated, shall be managed and disposed in accordance with Section 8.0.

If no confirmed or suspected radiological impact is detected during the surface screening survey, no further radiological testing/sampling or screening will be conducted on the surface soils/fill of the Site.

## **6.2 General Excavation Guidelines**

The areas of proposed subsurface excavations and associated previous subsurface screening (Figure 4) will be located/measured and marked in the field (using tape, lathe, paint or similar method). The soils within each area will then be screened for radiological impact using a hand-held gamma-ray detector. Measurements will be made of the fill/soils in-situ by lowering the probe down the sidewalls and across the surface of excavation base to check for suspect soils as the excavation proceeds. The screening will be conducted in excavation lifts that will not exceed 18-inches. Soils/fill exhibiting field screening measurements that correlate to radiological levels in excess of 7.1 pCi/g total radium will be considered to be radiologically contaminated at first. These potentially contaminated soils will be confirmed by laboratory testing of a representative soil sample. As with the surface screening, as each lift is screened, upon discovery of fill materials at or above the field screening measurement that corresponds to an Action Level of 7.1 pCi/g, excavation will stop and a representative soil sample will be collected. The suspect soil will remain in place until the surveying is completed and further evaluation by US EPA is completed. Radiologically contaminated soils requiring excavation shall be managed and disposed in accordance with Section 8.0. Once suspect materials are removed and the USEPA has released the area, the screening will continue until the limits of the proposed excavation or top of the native materials are reached.

Fill materials located in areas where construction activities will occur in both onsite and ROW locations, including but not limited to installation of utilities or other building foundations or structures will be surveyed completely. These areas when the screening is completed will be marked and recorded for future reference. Urban fill materials onsite are only subject to subsurface radiological screening/surveying in those areas proposed for subsurface construction work (Note: Final locations and depths to be decided based on the final construction plans and are subject to change to those provided in Appendix F); other areas will not be surveyed (with the exception of surface soils) if no impact is

found in the designated survey areas. Radiologically contaminated soils that are identified onsite will be excavated and removed for proper disposal (see removal, monitoring and sampling procedures in Sections 8.0, 9.0 and 10.0).

In some locations, where urban fill materials extend below the water table, the urban fill materials will be surveyed in the excavator bucket after they have been brought up to the surface by the excavator. In some cases, temporary shoring may also be needed to support the excavation and may include the use of trench boxes. Excavated soils will be both surveyed in the bucket and on the ground surface after they have been dumped out of the bucket. Surveying below the water table may continue until native soils are encountered (Note: Screening/surveying of excavated native soil materials, such as from deep caissons, is not required by this Workplan).

If the initial survey indicates readings correlating to a soil radiological level *below* the corresponding action level threshold 7.1 pCi/g of total radium, the soils will then be classified as non-radiologically-contaminated soils, consistent with Section 12.0 of this Workplan. This soils/fill can be managed/reused within the Site boundaries by the General Contractor without further radiological considerations. Excavated soils not utilized onsite may be disposed of offsite in an approved landfill as required by the Illinois EPA.

If the radiation survey indicates that screening levels are *equal to or exceed* the correlated action level threshold of 7.1 pCi/g, the area will be segregated as a "Hot Zone" and left in place and the USEPA will be notified of the discovery. A representative soil sample(s) will be collected in the area by the USEPA (or with USEPA oversight/approval) to quantify the concentration of radiological contamination (Section 11.0). The USEPA may also oversee radiological gamma screening of a define "hot spot" and may overs the collection of the sample by the sit e radiological contractor. USEPA may also collect a split sample. The sample will be sent directly to NAREL and the USEPA will be given notification prior to and following shipment to NAREL. The analytical report and sample will then be forwarded to the USEPA for potential subsequent confirmatory analysis performed by USEPA's radiological laboratory. After the quantification of the soil sample, if the soils are required to be removed, the radiologically contaminated soils will be excavated and placed in Super Sack<sup>®</sup> containers, stored onsite in a fenced area, and then shipped offsite for disposal in accordance with Section 8.0. If required by certain conditions (such as long term storage of several months or higher level impact is found), the Super Sack containers may be placed in a metal shipping container(s) with metal integrated top, and temporarily stored onsite, pending off-site disposal in accordance with Section 8.0. After removal of the fill contaminated with thorium, a verification soil sample(s) will be collected by the USEPA (or with USEPA oversight/approval) to confirm the impacted soils have been removed. If the analytical results of the verification sample(s) are below the threshold limit, the area will be released by the USEPA. This will provide interim approval after which USEPA would transmit the sample directly to NAREL for final verification analysis. The anticipate turn-around-time for NAREL's analysis for final verification will typically be 60 days.

In general, the depth of the excavation will be dependent on the depth of the urban fill materials in the given location and/or the depth of the proposed subsurface work. The proposed excavation depths range between 4 and 15 feet bgs, depending on the type of construction work planned in each area.

### 6.3 Proposed Onsite Construction Activities

Onsite activities in designated new construction areas (e.g., caissons, sheet piling, elevator shafts, utilities, frost walls, etc.) will result in the disturbance of subsurface soils. Soils/fill will be surveyed to cover the depth and width of these proposed foundation structures. For deeper foundations, such as structures that will fully penetrate the fill materials (i.e., caissons), surveying will be completed to the base of the fill materials. Other areas with shallower proposed foundation structures the fill materials will be surveyed to the proposed depth of the construction activities. The soils in each of the designated construction areas will be surveyed to the top of the water table or the base of the proposed construction activities. Fill soils excavated from below the water table will also be surveyed, using the procedures outlined in Section 6.2.

If suspect contamination is identified the fill will be segregated for sampling and potential disposal. If radiological contaminated fill is confirmed, the fill/soils will be excavated to meet the Action Level of 7.1 pCi/g prior to releasing the area to the General Contractor.

Described below are the specific activities that will disturb potentially radiologically contaminated soils at the Site.

#### 6.3.1 Sheet Piling, Frost Walls and Elevator Pits

Current construction plans call for the installation of steel sheet piling near a portion of the Site perimeter (frost wall) and for the perimeter walls around the elevator pits (4 areas). The sheet piling will likely be placed along the perimeter of the property boundary for construction of frost walls (Figure 3). Sheet piling installation along the perimeter may also require the removal of some of the adjacent concrete sidewalks and old foundations.

*Frost Wall* – Soils/fill will be surveyed around the Site perimeter and up to the existing edge of the sidewalk. The width of the excavation perpendicular to the sidewalk will be 6 feet, which should provide adequate clearance for construction activities to occur in this area. The depth of the frost wall will not exceed 4-feet in depth. Surveying will be conducted to a depth of 5.5 feet. Some of the excavations may be extended to accommodate surveying caissons located near or adjacent to the proposed frost wall. At the caisson locations surveying will be completed to the top of the native soils. Actual depths will depend on the zone and may in some cases extend deeper (See Figure 4).

*Sheet Piling for Elevator Pits* – Sheet piling will be installed for the construction of four onsite elevator pits. Sheet piling will also be installed along the eastern property boundaries. Sheet piling is being installed here to provide support for construction

activities. Soils/fill within the sheet piling enclosure area will be excavated to at least the top of the water table in this area, to provide the necessary clearance for elevator pit construction. Surveying will be completed in the location of the sheet piling and for those soils within the sheet piling enclosures. The area inside the sheet piling locations will also be surveyed to the base of the fill materials (i.e., top of the native soils).

### 6.3.2 *Caissons and Grade Beams*

The future installation of caissons has the potential to generate radiologically contaminated soil cuttings from the upper 15 to 20-feet of soils (estimated maximum fill material depth). As such, each caisson location will be surveyed with 18" lifts to the base of the fill materials. This may include surveying materials below the water table. Soils requiring surveying below the water table in the caisson locations will be surveyed by removing soils in the excavator bucket and surveying soils directly in the bucket first, then gently dumping the soils on the ground surface for further surveying.

Grade Beam depths vary between 4 feet and 8 feet, with a 14-foot deep cut at the tower elevator core. Accordingly, surveying will be completed to a depth of 5 to 16 feet, depending on the grade beam depth to provide for the installation of the grade beams without disturbing, or exposing workers to, potentially radiologically impacted soils.

### 6.3.3 *Onsite Utilities*

New utility conduits/connections are proposed for the new building construction. Utility trenches for hook up of electrical, cable, gas, phone, water and sewer will be surveyed to the proposed installation depth plus a safety factor (not less than 1.5 feet).

### 6.3.4 *Other Miscellaneous Excavations*

Site development activities may require other subsurface excavations (e.g., subgrade storm water control feature). These areas will be surveyed to the proposed installation depth.

**No subsurface work shall be conducted by the General Construction Contractor within these areas until fill within the vicinity of the proposed work have been surveyed under the direction of a certified health physicist.**

## 7.0 PHASE II – SCREENING DURING CONSTRUCTION OFFSITE

The soils/fill in selected adjacent offsite ROW and street areas will likely be surveyed during construction activities and after the completion of onsite surveying (Phase I); the surveying in the ROW area will be designated as Phase II of the surveying project. Logistically, Phase I is planned such that the General Construction Contractor will mobilize right after the site interior screening has been completed. After securing the site and the ROW, the ROW screening can commence. The ROW and street soil survey will be limited to those areas where proposed subsurface work will occur. The depth and location of the proposed work has not been finalized by the Site Owner as of the date of preparation of this Workplan. Once the locations of proposed excavations (e.g., new sidewalk, tree planter, utilities, etc.) are determined, these areas will be surveyed.

### 7.1 General Procedures for ROW and Street Soils

Screening will be conducted for offsite areas identified for planned subsurface work only. Other areas that are not planned for excavation or construction activities will not be surveyed, unless warranted based on future changes in planned construction activities. The planned offsite construction activities will include (but are not limited to) the installation of utilities, removal of selected concrete sidewalks, driveways and the installation of landscaping planter areas. In general the depth of the excavation will be dependent on the depth of the proposed structure or utility installation at the given location. The areas of proposed subsurface excavations will be located/measured and marked in the field (using tape, lathe, paint or similar method). Excavation depth is not expected to exceed 4 to 10 feet bgs. Based on the current depth of the planned construction activities, none of the areas will require screening below the water table.

**Urban fill materials offsite are only subject to subsurface radiological screening/surveying in those areas proposed for subsurface construction work (Note: Final locations to be decided based on final construction plans). Other areas between these areas will not be surveyed.**

Selected soils/fill excavated within the ROW will be initially surveyed by a field technician with a hand-held gamma-ray detector. Fill/soils in areas defined as having proposed subsurface activities will be surveyed in 18-inch lifts. Readings will be made of the fill/soils in-situ by lowering the probe down the sidewalls and across the base of the excavation to check for suspect soils as the excavation proceeds.

If the initial survey indicates readings that correlate to a radiological level in the fill is *below* 7.1 pCi/g of total radium, the fill/soils will then be classified as non-radiologically-contaminated soils, consistent with Section 12.0 of this Workplan. Installation of structures or utilities can then proceed without further radiological considerations. Soils/fill excavated from these areas that are not placed back into the screening excavation or reused onsite will be disposed of offsite in an approved landfill as required by the Illinois EPA. The excavation will then be backfilled with “clean” fill/virgin materials (as allowed by City of Chicago codes), compacted in place and finished with a temporary concrete surface patch.

If the radiation survey indicates radiological levels *equal to or exceed* the corresponding action level threshold of 7.1 pCi/g, the area will be designated as a "Hot Zone" and left in place and the USEPA will be notified of the discovery. A representative soil sample(s) will be collected in the area by the USEPA (or with USEPA oversight/approval) to quantify the radiological impact (Section 11.0). The sample will initially be analyzed by the designated radiological laboratory for the confirmation of the presence of radiological contamination. The resultant report and sample will then be forwarded to the USEPA for review and potential subsequent confirmatory analysis performed by USEPA's radiological laboratory (NAREL). The USEPA may also oversee radiological gamma screening of a defined "hot spot" and may oversee the collection of the sample by the site radiological contractor. USEPA may also collect a split sample. The sample will be sent directly to NAREL and the USEPA will be given notification prior to and following shipment to NAREL.

If the analysis of the soil sample confirms the existence of fill contaminated with thorium, the fill will be shielded (see section 7.2.2 for shielding procedures) or excavated for disposal (see removal and sampling procedures in Sections 8.0 and 11.0). Sidewall or base contamination encountered in a ROW utility trench will be protected by the placement of shielding materials and a tarp and/or plastic sheeting will be used to demarcate contaminated material. After the installation of shielding materials and monitoring of the exposure in the trench and confirmation of safe working levels, workers will be allowed to enter the excavation for utility installation.

No stockpiling of radiologically-contaminated soils will be conducted. As discussed in Section 6.0, excavated soils will generally be placed in Super Sack<sup>®</sup> containers or lined metal containers for shipment and off-site disposal in accordance with Section 8.0. For excavation of smaller amounts, the Super Sack<sup>®</sup> containers will be fenced and secured on the subject Site, with appropriate warning signs.

After removal of the impacted soil area, a verification soil sample(s) will be collected by the USEPA (or with their oversight/approval), see verification sample procedures Section 11.0). If the results are below the Action Level, the area will be released by the USEPA.

After the area is released and depending on the utility installation plans, utilities may be immediately installed or the excavation will be backfilled with "clean" materials as previously described.

## **7.2 Proposed Construction activities in the ROW**

Various off-site construction activities, including the removal of parts of the adjacent concrete sidewalk, and installation of new utilities, trees and planters in the ROW, will disturb fill potentially contaminated with thorium. Although the exact construction plans have not been finalized as of the date of this Workplan, some disturbance of the soils in the ROW and Street are anticipated. After the GC secures the site perimeter (including the sidewalks), soils in the ROW/sidewalk area will be surveyed to an appropriate depth corresponding to the depth of construction activities in the area. The surveying of the

sidewalk area will likely occur soon after the completion of Phase I (onsite surveying). A description of these activities is listed in the following sections.

#### 7.2.1 Concrete Sidewalk Removal

Site development will require the removal and subsequent replacement of sidewalks overlying the right-of-way along portions of the north, south and west perimeter of the Site. A qualified contractor will remove and handle the concrete in accordance with the procedures outlined in Section 6.0. After the removal of overlying concrete, surface soils/fill will be surveyed by a field technician. If the surface soils are determined to be radiologically contaminated, soils will be removed for disposal as explained previously in more detail in section 7.1.

#### 7.2.2 Utility Installation

Site development will require the installation of new utilities within the ROW. Proposed utility line locations have not been determined, but will be installed through one or more of the adjacent sidewalk areas. For each of these locations, the utility contractor will remove concrete and soils overlying the utility line location to the required depth of utility installation. Soils will be surveyed, excavated and handled in accordance with Section 7.0. The surveying for thorium contamination in soil will be concurrently with the installation of the utility in the street. Surveying will be completed on the ground surface prior to excavation as well as *in-situ* along the floor and sidewalls of the excavation and in the bucket as soils are removed from the excavation (if necessary).

As the excavation progresses in 18-inch lifts, the floor and walls will be surveyed by a field technician for radiation. If the excavated areas are found to contain fill contaminated with thorium, GaiaTech will promptly notify the USEPA and USEPA will make a determination at that time. It may be necessary to remove additional contamination prior to backfilling the trench for utilities. Radiological and non-radiological soils will be disposed of as outlined in Sections 8.0 and 12.0, respectively.

Upon confirmation that radiation levels meet the designated 2 mrem/hr criteria (worker exposure level as opposed to definition of contaminated soil at 7.1 pCi/g), the General Construction Contractor or a specific trade will be able to install utilities as required and backfill the excavation without further environmental oversight. If deemed appropriate by USEPA, the placement of suitable shielding materials may be required prior to installation of utilities and backfilling. Suitable shielding materials include, but are not limited to, "clean" soils/gravel, plywood, geotextile, and/or concrete pavement. After the placement of shielding materials (if used), the area will be resurveyed for radiation to document that radiation levels within the trench are below 2 mrem/hr.

If the General Construction Contractor will install the utilities at a later date, each of the utility trenches will be backfilled with "clean" sand or crushed stone to within 18 inches of the subsurface. The remainder of the excavation will be capped/paved with temporary concrete (per CDOT/IDOT regulations) until the utility contractor can install the utility

conduits. After the area is screened and contains no elevated levels in excess of the soil action level, the General Construction Contractor will be free to a later date to install the utilities as required and backfill the excavation without further environmental oversight.

### *7.2.3 Installation of Landscaping Planter Areas*

Several landscaping planter areas are currently proposed within the ROW. For each of these locations, a qualified Soil Screening Remedial Contractor will remove concrete sidewalks and soils overlying the proposed landscaping planter area and survey the fill materials to a reasonable depth that corresponds to development plans. The concrete and soils will be surveyed, excavated and handled in accordance with Section 6.2. Thorium contamination if encountered will be excavated, removed and disposed of as previously stated.

If no elevated levels are detected, the General Construction Contractor or landscaping contractor can plant the trees as required and backfill the excavation, without further environmental oversight.

## **7.3 Street Utility Installation**

Site development will require the installation of new utilities within the ROW that will extend into the adjacent street area. The excavation of the street trenches and adjacent ROW area will be installed at the same time. Proposed utility line locations have not been determined as of the date of this Workplan. The radiation surveying will be done immediately prior to utility installation in the street areas. For each of these locations, a contractor that is installing the utilities will remove concrete and soils overlying the utility line location to the required depth of utility installation. Soils will be surveyed and handled in accordance with Sections 7.1 and 7.2. Excavated soils will be handled in accordance with sections 8.0 and 12.0, as warranted.

**No subsurface work shall be conducted by the General Construction Contractor within these areas until soils within the vicinity of the proposed work have been surveyed under the direction of a certified health physicist.**

## 8.0 RADIOLOGICALLY CONTAMINATED SOIL HANDLING & DISPOSAL

An area confirmed by laboratory analysis to contain radiologically contaminated soils/fill will be excavated. During this work, the soils will be surveyed by a qualified field technician using a Ludlum gamma meter and probe to determine the extent of the contaminated area. After the soils/fill contaminated with thorium is removed from the excavation, a confirmatory/verification soil sample will be collected as described in Section 10.0.

Soils identified as radiologically contaminated in an area where the proposed re-development plan will disturb the subsurface soil shall be removed from the impact area and placed in a Super Sack container (1 cubic yard or larger) for direct shipment, after a sufficient number of Super Sack containers are accumulated for a truck load. The Super Sack containers can be temporarily stored on site in a fenced or taped off staging area with appropriate warning signs placed on the staging area. If required by certain conditions, the Super Sack container(s) may be placed directly into a plastic lined covered steel shipping container suitable for rail shipment and/or trucking to an approved landfill. Before off-site shipment, the containerized thorium-contaminated soils will be placed in a fenced area (located on the subject Site) and the container will be secured with appropriate warning signs placed on the container and the surrounding enclosure. Materials will be stored for as short a period as possible until shipping can be arranged reasonably. It is anticipated that in most cases, a truckload of Super Sack containers can be shipped out within a few days of the landfill approval.

Contractors conducting work on the site during these activities will be required to adhere to Health and Safety stipulations in Appendix G, as well as applicable federal, state and local regulations concerning activities conducted at the Site. Appropriate air monitoring will also be conducted as stipulated in Section 10.0, during most excavation activities. Confirmation and verification sampling will be conducted in accordance with Section 11.0.

The Site Owner will be responsible for supplying Super Sack containers or other approved shipping containers and the transportation and disposal of radiologically contaminated materials removed from the Site. That responsibility includes health physics personnel to survey transport containers, subcontractor transportation and logistics personnel, and documentation of shipping and disposal, according to federal and state regulations. It is anticipated that the Super Sack containers, shipping papers, logistics, monitoring and transportation will be provided by the approved disposal facility. When sufficient material has been accumulated to cost effectively transport for disposal or surveying has been completed, the Super Sack containers or other approved containers will be properly transported off-site for disposal by a qualified contractor to the designated and approved disposal facility.

**Work involving the excavation and/or relocation of radiologically contaminated soils shall be conducted by a qualified Soil Screening Remedial Contractor, utilizing workers with appropriate OSHA 40-hr HAZWOPER training.**

## 9.0 HEALTH & SAFETY PLAN

Work involving the excavation, handling, or disposal of potentially radiologically contaminated soils/fill or identified radiologically contaminated soils will be conducted in accordance with the attached Health & Safety Plan (Appendix G). Soil screened with a hand held instrument will not be considered as a final determination of soil concentration, but will provide the necessary information on working conditions and the need for shielding or soil removal. Soil concentrations measured with an appropriate laboratory instrument, such as a sodium iodide counter used with the NUTRANL equipment or with germanium counters used with gamma spectroscopy equipment, will be considered as a final determination.

Potentially radiologically contaminated soils are defined as follows:

- Soils, onsite, in the street, or in the ROW, that have not been surveyed by a field technician, under the direction of a certified health physicist, (or previously by USEPA personnel), using a calibrated hand-held gamma-ray detector.

Identified radiologically contaminated soils are defined as follows:

- Soils onsite, or in the ROW, which have been surveyed by a field technician, under the direction of a certified health physicist, using a calibrated hand-held gamma-ray detector and are found to be above the equivalent threshold limit value correlating 7.1 pCi/g total radium. Soils must also be quantified in a laboratory to contain total thorium above the USEPA Action Level of 7.1 pCi/g. Soils must also be quantified in a laboratory to contain total thorium above the USEPA Action Level of 7.1 pCi/g. Soils identified with a calibrated hand-held gamma-ray detector to be above the equivalent threshold limit value correlating to 7.1 pCi/g total radium should be considered to be "identified radiologically contaminated soils" unless confirmed to be otherwise as a result of laboratory analysis of a representative soil sample.

## 10.0 AIR MONITORING

Air monitoring will be conducted only during remediation of the thorium contaminated soil. Personnel air monitoring will be conducted during activities involving the excavation or handling of radiologically contaminated soils in accordance with the attached Health and Safety plan and as described below. No air monitoring will be conducted if no suspect or confirmed radiologically impacted soils are encountered or if the contaminated area is small.

The purpose of air monitoring is to measure the concentration of radioactive airborne dust that could be generated and emitted into the air as a result of the excavation of impacted soils. Air monitoring will provide data to identify the levels in the air at and surrounding the Site, in order to mitigate potential exposures to workers or people near the Site. The data collected during air monitoring will be used to document worker or public safety, provide control information and to evaluate work procedures and worker personal protective equipment (PPE). Air monitoring data will be used to evaluate work procedures in order to keep exposures for both workers and the general public as low as reasonably achievable (ALARA).

### 10.1 Regulatory Requirements

Excavation activities will be conducted in accordance with this work plan and the attached health and safety plan. Air monitoring will be in compliance with air effluent standards as specified in 10 Code of Federal Regulations (CFR) Part 20 (Unless more restrictive in 32 IAC 340), which are applicable to dose limits for individual members of the public. Average airborne concentrations will not exceed the specified limits in Table 2 of Appendix B to 10 CFR Part 20. Both worker exposure and airborne particulates and effluent release limits will be based on the most restrictive radionuclides levels, thorium 232.

### 10.2 Air Monitoring Activities

Air monitoring activities will be conducted onsite to monitor the exposure of workers to alert Site personnel to a potential release of airborne contaminants that may affect persons or property on the Site. Hi volume samplers will be used for excavation perimeter monitoring and low volume monitors for personal monitoring. Onsite monitors will be placed on workers or around excavation areas or placed along the perimeter of the Site. Air monitoring activities will be setup maintained and reported by the soil screening contractor with oversight by a certified health physicist.

### 10.3 Air Monitoring Analysis

After collection of the air samples, the samples will be transported under proper chain of custody procedures for analysis by the RSSI Laboratory in Morton Grove, Illinois or other approved laboratory.

## 11.0 THORIUM CONFIRMATION AND VERIFICATION SAMPLING

Sampling will be conducted as follows: 1) to confirm suspected radiologically contaminated soils/fill; and 2) for verification that the soils/fill in excess of the Action Level has been removed. Initial confirmation of contaminated soil and post remediation verification soil samples will be prepared for analysis utilizing the same techniques.

### Confirmation Sampling

Prior to sampling an identified impact area, each area will be roped off as a "Hot Zone" to prevent non-authorized personnel from entering the area during sampling activities. Personnel will be required to complete the sampling activities in the designated impact area utilizing modified Level D PPE. This will include booties, rubber gloves and Tyvek suites. During potential exposure time in the impact area, personnel will be monitored using radiation-monitoring badges. Personnel air monitoring will generally only be needed during longer-term remedial activities. Air monitoring will be conducted and monitored by a trained and qualified contractor.

After fill has been identified as containing thorium above Action Level of 7.1 pCi/g, the USEPA will be notified via telephone to On-Scene Coordinator (OSC) Verneta Simon at (312) 886-3601 and by email to [Simon.Verneta@epa.gov](mailto:Simon.Verneta@epa.gov) and also to Superfund Health Physicist (HP) Eugene Jablonowski at 312-886-4591 and also by email to [Jablonowski.Eugene@epa.gov](mailto:Jablonowski.Eugene@epa.gov), when an area with apparent soil impact is encountered. Generally, the USEPA will then be present at their discretion and expects a representative sample of the volume of the material that is the most elevated above the 7.1 pCi/g Action Level will be collected for analysis. Soil sampling will be accomplished by screening for the highest levels and then excavating the contaminated soils with a stainless steel scoop. The soils will then be placed in a large stainless steel bowl, mixed and sifted utilizing a ¼-inch sieve to remove the larger aggregate and fill materials. Prior to placing the sifted soils in a laboratory jar, the contaminated soils will be checked again with the Ludlum meter to document that the highest levels were collected for analysis. The soils will then be placed in laboratory supplied containers (Marinelli container), transported under chain of custody procedures and analyzed at RSSI Laboratories in Morton Grove, Illinois. At USEPA discretion, the Marinelli sample containers will have a custody seal applied.

A representative soil sample(s) will then be collected in the area by the USEPA (or with USEPA oversight/approval) to verify the remaining concentration of radiological contamination if any. The USEPA may also oversee the collection of the sample by the site radiological contractor. USEPA may also collect a split sample. The soils will be placed in laboratory supplied containers (Marinelli container), transported under chain of custody procedures and analyzed at RSSI Laboratories in Morton Grove, Illinois. The sample containers will have a USEPA seal placed on the jar. After the initial analysis by the contractor's laboratory, the analytical report and sample will then be forwarded to the USEPA for potential subsequent analysis performed by USEPA's radiological laboratory. If the analytical results of the sample(s) are below the threshold limit, no further remediation will be

conducted for the area, subject to the USEPA's approval. If the levels are confirmed to be above the threshold limit value of 7.1 pCi/g, the soils will be removed and placed in supersaks as outlined in this document.

When sampling has been completed, sampling tools will be wiped clean with towels and checked for residual radiological impact with a Ludlum Model 3 with a pancake probe. Personnel will also be checked with the pancake meter to document that they were decontaminated. Any contaminated PPE and cleaning towels will be disposed of with the contaminated soil in a Super Sack container for offsite disposal.

### Verification Sampling

Verification soil samples provide documentation that the impacted area has been adequately cleaned up; a verification sample release form will be sent to the USEPA for that specific release area so the Agency can designate the remaining soils as below the Action Level and release the area.

Prior to sampling an identified impact area, each area will be roped off as a "Hot Zone" to prevent non-authorized personnel from entering the area during sampling activities. Personnel will be required to complete the sampling activities in the designated impact area utilizing modified Level D PPE. This will include booties, rubber gloves and Tyvek suites. During potential exposure time in the impact area, personnel will be monitored using radiation-monitoring badges. Personnel air monitoring will generally only be needed during longer-term remedial activities. Air monitoring will be conducted and monitored by a trained and qualified contractor.

Generally, the USEPA will then be present at their discretion, and expects a representative sample of the volume of the material that is the most elevated above the 7.1 pCi/g Action Level in the verification area will be collected for analysis. Soil sampling will be accomplished by screening for the highest levels and then excavating the contaminated soils with a stainless steel scoop. The soils will then be placed in a large stainless steel bowl, mixed and sifted utilizing a ¼-inch sieve to remove the larger aggregate and fill materials. Prior to placing the sifted soils in a laboratory jar, the contaminated soils will be checked again with the Ludlum meter to document that the highest levels were collected for analysis.

A representative soil sample(s) will then be collected in the area by the USEPA (or with USEPA oversight/approval) to verify the remaining concentration of radiological contamination if any (Section 11.0). The USEPA may also oversee the collection of the sample by the site radiological contractor. USEPA may also collect a split sample. The soils will be placed in laboratory supplied containers (Marinelli container), transported under chain of custody procedures and analyzed at RSSI Laboratories in Morton Grove, Illinois. At USEPA discretion, the Marinelli sample containers will have a custody seal applied.

After the initial analysis by the contractor's laboratory, if the analytical results of the verification sample(s) are below the threshold limit, the area will be released by the USEPA. The analytical report and sample will then be forwarded to the USEPA for potential

subsequent verification analysis performed by USEPA's radiological laboratory. The anticipated turn-around-time for NAREL's analysis for final verification will typically be 60 days. If the sample is still above the threshold, additional soil removal and sampling will be necessary.

When sampling has been completed, sampling tools will be wiped clean with towels and checked for residual radiological impact with a Ludlum Model 3 with a pancake probe. Personnel will also be checked with the pancake meter to document that they were decontaminated. Any contaminated PPE and cleaning towels will be disposed of with the contaminated soil in a Super Sack container for offsite disposal.

## 12.0 NON-RADIOLOGICALLY CONTAMINATED SOIL DISPOSAL

Previous results obtained during past sampling activities, indicated that the near surface fill/soils exhibited concentrations of various constituents rather thorium. This included various PNAs and lead at concentrations over IEPA TACO Tier 1 remediation objectives. The excavated soils would most likely be considered non-hazardous special waste or clean construction and demolition debris (CCDD) for disposal purposes. This section outlines sampling protocols for those excavated spoils that 1) do not exhibit evidence of radiological contamination, and 2) are to be disposed offsite.

In accordance with USEPA waste profiling requirements, a series of samples will be collected for required landfill parameter analysis. This includes both a "composite" and a "grab" sample. The "composite sample" will be collected that is representative of the excavated fill materials. In addition, a "grab" sample will also be collected from the fill materials. After collection, the soil samples will be placed in clean laboratory supplied containers. The samples will be secured in a sample cooler and preserved with ice. Under strict sample chain-of-custody procedures, the samples will be delivered to a local qualified and certified analytical laboratory for analysis.

The "composite" sample will be analyzed for the following parameters: SVOCs, Target Analyte List (TAL), reactive sulfide, reactive cyanide, herbicides, pesticides and polychlorinated biphenyls (PCBs). The "grab" sample will be analyzed for VOCs. The analyses will be in accordance with USEPA approved methods.

The analytical results will be used for landfill profiling to provide for the disposal of the excavated soils as Special Waste.

### **13.0 NEW IMPORTED BACKFILL MATERIALS**

Incoming backfill material to be used at the Site or in the ROW/street area will be screened to measure its total radium concentration. Incoming backfill materials will not exceed 3.7 pCi/g and on-site excavated soils can be re-used so long as it is under the Action Level of 7.1 pCi/g total radium. No testing will be required if CA-6 or CA-1 (or crushed stone) or "clean" virgin sand (utility trenches) is used as backfill.