



STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

This contract authorizes the professional services contractor to provide professional services.
(Authority: 1984 PA 431)

CONTRACT FOR PROFESSIONAL ENVIRONMENTAL SERVICES:
Indefinite Scope-Indefinite Delivery

THIS CONTRACT, authorized this 17th day of February the year two-thousand and twenty-three (2023), by the Director, Department of Technology, Management and Budget, BETWEEN the STATE OF MICHIGAN acting through the STATE FACILITIES ADMINISTRATION, DESIGN AND CONSTRUCTION DIVISION of the DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET, 3111 W. St. Joseph Street, Lansing, Michigan, 48917, hereinafter called the Department, and

Environmental Resources Group, LLC (ERG)
28003 Center Oaks Ct., Suite 106
Wixom, MI 48393

the Prime Professional Services Contractor, hereinafter called the
Professional. WHEREAS the Department proposes securing
professional services for:

Indefinite-Scope, Indefinite-Delivery Contract No. 00928

Index No. (To Be Established)
Contract Order No. Y (To Be Assigned)
File No. (To Be Assigned)

Department of Technology, Management and Budget, State Facilities Administration, Design and Construction Division, Professional Environmental Services Indefinite-Scope, Indefinite-Delivery Contract (ISID) for Minor Projects –

2023 Environmental ISID Services

Various State Departments and Facilities
Various Site Locations, Michigan

NOW THEREFORE, the Department and the Professional in consideration of the covenants of this Contract agree as follows:

- I. The Professional shall provide primary environmental investigation/assessment/design/construction oversight services for the assigned projects to the extent authorized by the Department of Technology, Management and Budget State Facilities Administration (SFA), Design and Construction Division (DCD) [The Department] and be solely responsible for such professional services. The Professional's services shall be performed in strict accordance with the assigned Project scope of work.
- II. If authorized, the Professional shall provide environmental services for the regions and project types identified below.

Regions							
Western UP	Eastern UP	Northern LP	Saginaw Bay	Western LP	Central LP	Southwestern LP	Southeastern LP
X	X	X	X	X	X	X	X

Project Types and Services Offered												
X	Asbestos/Lead/Mold/Biohazard/Free Product Regulated Waste Survey/Abatement											
X	Brownfield Development											
	Ecological Risk Assessment / Forestry and Land Management / Wetland Mitigation / Streams and Lakes Restoration											
X	Environmental Investigation / Characterization / Pilot Tests / Feasibility Study											
X	Environmental Roto Sonic Drilling / Well Abandonment											
X	Ground Penetrating Radar (GPR) / Laser-Induced Fluorescence (LIF) Field Screening											
X	Landfill Maintenance / Monitoring											
	Nuclear Waste Management / Disposal / Remediation											
X	Per- & Polyfluoroalkyl Substances (PFAS) Sampling / Mitigation / Remediation											
X	Phase I / Phase II / Baseline Environmental Assessments											
X	Remediation Systems Design / Construction Oversight / O & M / Decommissioning											
	Specialty Sub-Surface / Utility Inspection / Sewer Camera / Cleaning											
X	Underground / Aboveground Storage Tank (UST / AST) Removal / Demolition/ Soil Excavation / Closure											
X	Vapor Intrusion Assessments / Risk Mitigation / Design / Installation / O & M Services											

NOTE: Blackened box(es) indicate a service that the committee did not select for your firm.

- III. The State of Michigan shall compensate the Professional for providing their professional services for the Project in accordance with the conditions of this Professional Services Contract.

IN WITNESS, WHEREOF, each of the parties has caused this Professional Services Contract to be executed by its duly authorized representatives on the dates shown beside their respective signatures, with the Contract to be effective upon the date on which the Professional received a copy executed by the authorized State of Michigan representative(s) by regular, registered, or certified mail or by delivery in person.

FOR THE PROFESSIONAL:

Environmental Resources Group, LLC

Firm Name

CV0052614

SIGMA Vendor ID Number



2-23-2023

Signature

Date

President

Title

FOR THE STATE OF MICHIGAN:



March 3, 2023

Director, DTMB | SFA | Design and Construction

Date

WHEREAS this Professional Services Contract constitutes the entire agreement as to the Project between the parties, any Contract Modification of this Contract and the Department's approved and attached Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for, the Professional firm's final design Contract Documents/architectural and engineering design errors, omissions, or neglect on the part of the Professional.

ARTICLE I PROFESSIONAL SERVICES SCOPE OF WORK

Provide professional environmental services, technical staff, and support personnel for ISID minor projects on an as-needed basis at various State/Client Agencies within the various site location areas as defined by the State of Michigan.

This Contract is for professional environmental investigation and/or design services for an unspecified number of ISID projects ("Assignment"). The scope of work for each assigned project will be defined at the time the project is awarded by the State to the Professional firm. The professional environmental services required for each of these assigned projects requested by the Department may include any or all of the Tasks included in the Phase 100 – Study through the Phase 900 – Operation and Maintenance Management.

The Professional firm's environmental services shall be performed in strict accordance with this Professional Services Contract and be in compliance with the Department's approved and attached Appendix I– Project/Program Statement.

This Contract does not warrant or imply to the Professional environmental firm, entitlement to perform any specific percentage (%) amount of environmental work during the life of this Contract.

This Contract will remain in effect for **three (3) years** from the date of this Contract award but may be unilaterally terminated by the State of Michigan at any time, for cause or its convenience, by written notification of the State, to the Professional. Furthermore, this Contract may be extended for **one (1) additional year**, at the sole option and discretion of the State upon the Department providing written notice to the Professional prior to the expiration of the original Contract time period. Any such time extension shall be subject to the terms and conditions of this Contract, including, but not limited to, the existing hourly billing rates included in this Contract for the Professional, their Consultant, and their employees or agents.

Please note that the Professional Services Contract ISID Contract No., as noted on page 1, must be provided on all Project correspondence and documents. Also, services are not to be provided or expenses incurred until individual ISID Projects are assigned to this Contract (see the Article II – Compensation and the Appendix 1 – Project/Program Statement).

Upon award of this Contract and each subsequent assignment, the Professional understands and agrees that time is of the essence. Failure to adhere to timely completion will be grounds for the Department, at its sole discretion, to terminate or limit future work under this Contract.

The Professional shall provide all professional services, technical staff, and support personnel necessary to complete the Project as described in its Project/Program Statement, in the best interest of the State, and within the Professional's fee(s) herein authorized by the State. Assigned project services shall comprise, without exception, every professional discipline and expertise necessary to meet all the requirements as described in the Project/Program Statement and in accordance with the accepted industry standards for professional practice and services. The Professional's services include attendance at all Project related meetings and conferences. Professional services for the assigned projects under this contract shall be provided in the Phase/Task sequence shown below and shall be rendered in accordance with the Professional's proposed and approved Project Study, Design, and Proposed Construction Schedule. The Professional's study, design, and proposed construction schedule shall be detailed, undated, and time sequence related for all Phase/Task services appropriate for the Project. The Professional shall field-check and verify the accuracy of all study/drawing and any data furnished by the Department, the State/Client Agency or any other Project related source. The Professional shall not employ or consult with any firms in completing the Professional's obligations herein who it anticipates will be a construction Bidder for the Project or any part thereof, unless specifically authorized, in writing, by the Department.

The Professional acknowledges that the Department is the first interpreter of the Professional's performance under this Contract.

The Professional acknowledges by signing this Professional Services Contract having a clear understanding of the requested professional environmental services required by the Department, and further agrees that the terms and conditions of this Professional Services Contract provide adequate professional fee(s) for the Professional to provide the requested Project scope of work requirements for each assigned project. No increase in compensation to the Professional will be allowed unless there is a material change made to the scope of work of the Assignment/Program Statement and the change is accepted and approved, in writing, by the State. Professional services shall not be performed, and no Project expenses shall be incurred by the Professional prior to the issuance of a written and signed Professional Services Contract and a Contract Order authorizing the Professional to start the Project work. Compensation for Department directed changes to the Project will be provided to the Professional by a Contract Modification and/or Contract Change Order signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from changes in the Project scope of work or previously unknown on-site field conditions will be compensated to the Professional, as approved by the Project Director/Agency Project Manager, on an hourly billing rate basis in accordance with this article. This compensation shall not exceed seven and half percent (7.5%) of the Construction Contractor's quotation for the Bulletin or Contract Change Order or an amount mutually agreed upon by the Professional and the Project Director/Agency Project Manager.

The Professional shall immediately inform the Department whenever it is indicated that the Professional's authorized not-to-exceed Budget for any of the assigned Projects may be exceeded. The Professional shall make recommendations to the Department for revisions to be implemented in order to not exceed the original authorized Budget. Any revision to the Project must be accepted and approved by the Department in writing.

The professional services may also include participation in legislative presentations as described in the "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" and as the legislature or the Department may prescribe.

No substitution of any "Key Personnel/Employee" essential for the successful completion of the Project and identified in the Professional's Organizational Chart will be allowed by the Professional for this Contract without the prior written consent from the Project Director/Agency Project Manager. Before any "Key Personnel/Employee" substitution takes place, the Professional shall submit a written request to the Project Director/Agency Project Manager, and this substitution request shall include the following information: (1) A request in writing for a No Cost Contract Modification; (2) Detailed written justification for this substitution; (3) The Professional's qualifications of any proposed "Key Principal Personnel/Employee" replacement; and (4) A written statement from the Professional assuring the Department that the Project scope of work will not be adversely affected by this substitution. This request to modify their Professional Services Contract must be accepted and approved in writing by the Project Director/Agency Project Manager and the Director of the Department.

The Department will designate individuals to serve as the Project Director and Agency Project Manager for the Project scope of work who shall be fully acquainted with the Project/Program Statement and have the authority to render Project decisions and furnish information promptly. Except in connection with issues under the Article XII - Contract Claims and Disputes text, the Project Director/Agency Project Manager will exercise general management and administration for the Professional's services in so far as they affect the interest of the State. The Professional shall indemnify, defend, and hold harmless the State against exposure to claims arising from delays, negligence, or delinquencies by the Professional for the professional services of this Contract.

During the Construction Administration Services Phase of the Project, the Professional is required to complete and submit, the on-site inspection record form, "DTMB-0452, The Professional's Inspection Record," for all on-site inspection visits to the Project site. The Inspection Record shall be completed and signed by the Professional and submitted monthly, with the original document sent to the Project Director/Agency Project Manager and copies sent to the Construction Contractor. The Inspection Record shall accompany the Professional's monthly payment request.

The "DTMB-0460, Project Procedures" contains Department forms which shall be used during the Construction Administration Phase of this Contract. All professional services will be consistent with the Department's current "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" unless otherwise approved in writing by the Department.

The professional services required for each Phase of this Contract shall be performed by the Prime Professional and their Consultants in accordance with service descriptions in this article. The following service descriptions outlined in this Contract represent the Department's standard of care for the Professional's responsibilities for providing the professional services of this Contract; but by inclusion, or omission, the descriptions do not limit or exclude any regular or normal professional services necessary to accomplish the Project in accordance with the approved Project Budget and the industries accepted practice and standards for professional services. All of the services outlined in this Contract may not be applicable to the Project/Program Statement. The Professional shall determine and coordinate the interface of the services required for the Project and is responsible for identifying any additional services necessary to successfully complete the Project.

The professional shall execute the following PHASES upon written authorization from the Project Director.

PHASE 100 - ENVIRONMENTAL INVESTIGATION/STUDY SERVICES

Provide complete and comprehensive Environmental Investigation/Study Deliverables to meet the requirements of the Project/Program Statement. Upon completion of all field investigation, assessment, research, review and/or oversight, prepare a complete report with an executive summary, and in such detail, as the Project Director may prescribe. The services under this phase may include but not be limited to coordination, environmental assessments, drilling, field sampling/oversight, data/document review/management, feasibility study, and reporting as described in the Project/Program Statement. Project reports must be in accordance with Department/Client/Agency requirements and as outlined in the Project/Program Statement but shall include, as a minimum and as appropriate, the following items: (1) Problem; (2) Conclusion; (3) Recommendations; and (4) Discussion, details, and documentation.

PHASE 300—SCHEMATIC DESIGN

Prepare Schematic Design Deliverables consistent with the Project/Program Statement. The deliverables shall consist of conceptual remediation system, drawings, outline specifications, a Schematic Construction Cost Estimate, other related documentation, and shall diagrammatically depict the areas, scales, and relationships of the functions. The services under this phase may include but not be limited to coordination, construction codes and design reviews, civil/site staging investigation, schematic design and utilities review, drafting, and project cost/proposed construction schedule, as required by the Department/Client/Agency and as outlined in the Project/Program Statement. Acceptance of the Schematic Design by the Department/Client/Agency does not limit subsequent inclusion of minor, but essential, schematic or design details whose necessity and arrangement may best become apparent during subsequent Phases of the Project design. Revise design as necessary and obtain approval from the Department/Client/Agency.

PHASE 400—DESIGN DEVELOPMENT

Prepare Design Development Deliverables based on the Owner-accepted Schematic Design to depict the intent of the designed remediation system(s). The deliverables shall consist of draft drawings and specifications, Construction Cost Estimates and other related documentation to clearly establish the complete basis for further detail into final design drawings/specifications. The deliverables shall further define the Project by fixing and describing the Project size, character, site relationships, and other appropriate elements including the environmental, civil, structural, architectural, mechanical, electrical, and safety systems. The services under this phase may include but not be limited to coordination, draft drawings/specifications, site specific staging investigation, structural calculations and preliminary environmental/architectural/engineering design development/reviews of drawings/specifications, as required by the Department/Client/Agency and as outlined in the Project/Program Statement.

PHASE 500—CONSTRUCTION DOCUMENTS AND BIDDING DOCUMENTS

Prepare Construction Documents that revise, refine, amplify, and depict, in detail, the Project. The documents shall set forth, in detail, quality levels of and requirements for the construction, and shall consist of final drawings/specifications that comply with applicable regulatory and construction code requirements, enacted at the time of completion of the one hundred percent (100%) Construction Documents. Prepare Bidding Documents in Phases/Bid packages appropriate to the Project requirements and funding. Incorporate the current edition of DTMB "MICHSPEC", "DCSPEC" or "50KSPEC", as adopted and modified by the State of Michigan. The Construction Documents shall contain all information necessary to bid and construct the Project. The services under this phase may include but not be limited to coordination, final drawings/specifications and bidding documents, civil/site staging design, final structural calculations, final environmental/architectural/engineering design development/reviews of drawings/specifications, construction testing program, hazardous materials, health and safety risks, final design correction procedures, design and construction budget, construction codes/permits and construction schedule, as required by the Department/Client/Agency and as outlined in the Project/Program Statement.

PHASE 600 - CONSTRUCTION ADMINISTRATION - OFFICE SERVICES

Provide all required construction oversight administration and timely professional review and administrative services, as the circumstances of the Construction may require, allowing the successful review/implementation of the Construction Documents into a completed remedial actions/abatement measures and/or for the use intended by the Department/Client/Agency. The services under this phase may include but not be limited to coordination, review and approval of shop drawings and submittals, reporting of construction progress, construction quality testing, construction contractor performance review, punch list procedures, claims, establishing close-out procedures and developing/review of as-built documents, as required by the Department/Client/Agency requirements and as outlined in the Project/Program Statement.

PHASE 700 - CONSTRUCTION ADMINISTRATION - FIELD SERVICES

Provide all required Construction Oversight and Field Services, including timely inspection and professional services, as the circumstances of the Construction may require, allowing the successful review/implementation of the Construction Documents into a completed remedial action/abatement measures and/or for the use intended by the Department/Client/Agency. The services under this phase may include but not be limited to coordination, field inspections, progress meetings and final project inspection, as required by the Department/Client/Agency requirements and as outlined in the Project/Program Statement.

PHASE 900 – OPERATION AND MAINTENANCE SERVICES – REMEDIATION FACILITY

Provide all required Operation and Maintenance (O&M) Services and perform, in a safe and secure environment, all functions, including timely inspection, sampling and professional services, necessary to maintain uninterrupted, effective and efficient facility/system components for the use intended by the Department/Client/Agency. The services under this phase may include but not be limited to coordination, general system operation/inspections, routine system/building/ground maintenance, sampling, spare replacement parts, consumable supplies, utilities, waste materials removal/treatment/disposal, non-routine emergency services, progress meetings and reporting, as required by the Department/Client/Agency requirements and as outlined in the Project/Program Statement.

ARTICLE II COMPENSATION

In consideration of the performance of this Contract, the Department agrees to pay the Professional, as compensation for professional services, an hourly billing rate for each employee providing a direct service to this Project, on a not-to-exceed basis as specified herein, subject to subsequent modifications mutually agreeable to the parties hereto; provided, however, the Professional may not incur costs, or bill the Department, for professional services in excess of the estimates established for this Project without the prior written agreement of the Department. The attached proposal prepared by the Professional in response to the Request for Proposal, by the Owner, may describe methodology, services, schedule, and other aspects of the work to be performed under the Contract but does not supersede the Contract.

Compensation to the Professional shall be on an hourly billing rate basis for professional services rendered by salaried and non-salaried professional, technical, and technical support employees, except for any authorized reimbursable expenses provided for in this Contract. Total compensation for any Phase shall not exceed the amount authorized for that Phase, unless authorized in writing by the Department's approved Contract Change Order. Professional services shall not be performed, and no Project expense shall be incurred by the Professional firm prior to the issuance of a written and signed Professional Services Contract and a DTMB Form 0402 - Contract Order by the Department to the Professional, authorizing the Professional to start the Project.

Compensation to the Professional for services and authorized technical and technical support employees performing a direct service for this Project shall be determined using the Professional firm's billing rates. The Professional firm's hourly billing rate shall be the actual amount paid for the employee services on the Project including fringe benefits, vacations, sick leave, other indirect costs, and profit. The Professional firm's hourly billing rates shall not change during the life of this Contract without written approval by the Department. See attached Appendix, **Overhead Items Allowed for the Professional Services Contractor Firm's Hourly Billing Rate Calculation**, for the guide to overhead items allowed for the professional services contractor firm's hourly billing rate calculation. Reimbursement for the Project/Program Statement scope of work requirements will be provided only for Department approved items authorized for reimbursement compensation in this Contract. The State will not reimburse the Professional for downtime, or for personnel involved in downtime due to mechanical problems or failure of Professional's or Subcontractor equipment.

The preparation of Bulletins and Contract Change Orders resulting from changes to the Project scope of work or previously unknown on-site field conditions will be compensated to the Professional, as approved by the Department on an hourly billing rate basis in accordance with this article. This compensation shall not exceed seven and one-half percent (7.5%) of the Construction Contractor's quotation for the Bulletin or Contract Change Order or an amount mutually agreed upon by the Professional and the Project Director/Agency Project Manager.

The Professional shall provide, but no additional monetary compensation shall be allowed for the services necessary to respond to and resolve all claims arising wholly or in part from the Professional's errors and/or omissions or other aspects of the Project's design or the Professional firm's performance which is inconsistent with the Professional or Construction Contract.

- 2.1 PREMIUM TIME/OVERTIME: This Contract anticipates that no premium or overtime is required to achieve the Project's scope of work. No compensation will be allowed to the Professional for any premium or overtime cost incurred to achieve the Project schedule of this Contract, unless directed in writing by the Project Director/Agency Project Manager and approved by the Department.
- 2.2 EMPLOYEE HOURLY BILLING RATES: Hourly billing rates will include all direct and indirect monetary costs to the State for the Professional's services under this Contract other than the authorized and approved reimbursements. Hourly billing rates shall be based on the Professional's documented historical operating expenses and adjusted for Project specific costs. In no case shall this documentation period include more than eighteen (18) months prior to the date of award of this Contract.

Lump-sum payments to employees are not allowed under this Contract. Billing rates for employees who perform professional services of a subordinate or of a position classification having a lower classification/pay range shall be accounted and paid for at the lower hourly billing pay rate. The hourly billing rate charge of any employee may be changed by the Professional with a written and Department approved Contract Modification to account for normal personnel pay increases.

Hourly billing rates include, but are not limited to: Overhead items such as employee fringe benefits, vacations, sick leave, insurance, taxes, pension funds, retirement plans, meals, lodging, and all Project related travel expenses for Projects less than one-hundred (100) miles in each direction from the Professional's nearest Michigan office, computer costs/operating costs, data entry, and time, telephone, telephone- related services, and all reproduction services (except Contract Bidding Documents/Deliverables).

The hourly billing rate also includes all reproduction costs for design interpretations, study/design clarifications and Bulletins related to design errors or omissions, construction code compliance (precipitating either from design code compliance and plan review, design interpretations, or construction on-site/field inspections), and all similar, or avoidable costs.

All incidental postage, mail, or other shipping or delivery services, acquisition, bad debts, previous business losses, employment fees, depreciation, and operating costs for equipment, including computer design and/or computer drafting systems, and any specialized testing equipment are to be included. The hourly billing rate shall include, without exception, secretarial, computer/typing/word processing, editing, and clerical services utilized in any way for the Project as well as other non-technical and/or employees providing indirect services. The hourly billing rate also includes all profit without regard to its form or distribution.

Items not allowable as part of the Professional's calculated hourly billing rate include but are not limited to: Any costs associated with litigation and settlements for the Professional, other liability suits, out-of-state offices and associated travel, bonuses, profit sharing, premium/overtime costs, public relations, entertainment, business promotion, contributions, and various speculative allowances.

The hourly billing rate for the Professional may not be applied to the work of the Professional's Sub- Consultant's staff. Each Sub-Consultant firm must submit a separate hourly billing rate with proper documentation for Sub-Consultant services provided as part of the Proposal. The hourly billing rate of the respective Consultant firm shall be used for that Consultant firm's personnel only. No mark-up to Consultant firm's charges will be allowed.

- 2.3 RANGE OF EMPLOYEE HOURLY BILLING RATES: The Professional shall identify the service being provided and include the Professional's or Consultant's employee(s) full names and position classifications for the Project and their current hourly billing rates at the beginning and at the anticipated end of the Project. This hourly billing rate range shall reflect any anticipated pay increases over the life of the Contract. The range of hourly billing rates for any employee position or classification may not be changed without an approved Contract Modification.

- 2.4 DIRECT COST REIMBURSEMENT ITEMS: The Professional's Consultant services and authorized reimbursable expenses shall be treated as an authorized reimbursable expense item at a direct cost. The Professional shall be responsible for the selection of the supplier of the professional services or materials; the coordination, adequacy, and application of the professional services, whether provided by the Professional's staff or provided by their Consultant, and any Project costs that exceed the budget for each Phase.

Project related travel expenses (mileage, meals, lodging) for Projects more than one-hundred (100) miles in one- way from the Professional's nearest office shall be treated as an authorized reimbursable expense at the State of Michigan's current travel rates.

Unless authorized elsewhere in this Contract, direct cost reimbursement items shall be limited to the actual cost of printing and reproduction of project deliverables such as Final Study Reports, Surveys, Bidding Documents, and U. S. Mail regular shipping postage of the project deliverables listed above. In addition, direct cost reimbursement items may include soil borings, site surveys and any required laboratory testing, Design Code Compliance and Plan Review Approval Fees by the licensing agency; reproduction of documents for legislative presentation, artistic productions, mobilization of testing equipment, laboratory costs for testing samples, per-linear-foot cost of soil borings and specialized inspections of the structural, mechanical, electrical, chemical or other essential components of the Project.

Compensation for this Contract shall not exceed the budget per Project Phase identified in the attached Contract Order unless authorized by a Department approved Contract Modification. It shall be the Professional's responsibility to carefully monitor Project costs, activities, and progress and to provide the Project Director/Agency Project Manager timely notification of any justifiable need to increase the authorized budget. The Professional may not proceed with professional services that have not been authorized by the Project Director/Agency Project Manager and shall immediately notify the Project Director/Agency Project Manager if such services have been requested or have become necessary.

Professional/Sub-Consultant staff and hourly billable rates are identified in the attached Professional's proposal.

ARTICLE III PAYMENTS

Payment for the professional services shall be based on the Professional's performance of authorized professional service(s) performed prior to the date of each submitted payment request. Payment requests shall be submitted monthly to the Project Director/Agency Project Manager on a payment request form (DTMB-440). Payment for each monthly submitted payment request shall be made within thirty (30) consecutive calendar days following the Department's approval of the payment request. Payment requests shall include signed certification by the Professional of the actual percentage of work completed as of the date of invoicing for each Phase and summarize the amounts authorized, earned, previously paid, and currently due for each Project Phase.

Payment requests shall be supported by itemized records or documentation in such form and detail as the Department may require.

Each of the Professional's Consultant's submitted payment request applications shall include similar information. This includes, but is not limited to:

- Phase Numbers for the professional services provided.
- Professional's personnel and position/classification providing service and hours worked. Current hourly billing rate charges for each individual position/classification.
- Copy of certified on-site visitation log or site visit report showing time on-site.
- Itemized invoices from each of the Professional's Consultant's documenting that firm's professional services charge and the Project work related services provided.
- Authorized reimbursable expense items provided with receipts and invoices.

The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify the Professional of any dispute within a reasonable time. Payment by the State will not constitute a waiver of any rights as to the Professional's continuing obligations, including claims for deficiencies or substandard Contract Activities. The Professional's acceptance of final payment by the State constitutes a waiver of all claims by the Professional against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

The State will only disburse payments under the Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at <http://www.michigan.gov/SIGMAVSS> to receive electronic funds transfer payments. If Contractor does not register, the State is not liable for failure to provide payment. Without prejudice to any other right or remedy it may have, the State reserves the right to set off at any time any amount then due and owing to it by Contractor against any amount payable by the State to Contractor under this Contract

ARTICLE IV ACCOUNTING

The Professional shall keep current and accurate records of Project costs and expenses, hourly billing rates, authorized reimbursable expense items, and all other Project related accounting documents to support the Professional's monthly application for payment. Project records shall be kept on a generally recognized accounting basis. Such records shall be available to the Department for a period of ten (10) years after the Department's final payment to the Professional. The State of Michigan reserves the right to conduct, or have conducted, an audit and inspection of these Project records at any time during the Project or following its completion.

ARTICLE V INSURANCE

The Professional shall purchase, maintain and require such insurance that will provide protection from claims set forth below which may arise out of or result from the Professional firm's services under this Contract, whether such service is performed by the Professional or performed by any of the Professional firm's Consultant's or by anyone directly or indirectly employed by them, or by anyone for whose acts they may be liable. The following insurance policy limits described below are intended to be the minimum coverage acceptable by the State:

For the purpose of this Section, "State" includes its departments, divisions, agencies, offices, commissions, officers, employees, and agents.

- (a) The Contractor must provide proof that it has obtained the minimum levels of insurance coverage indicated or required by law, whichever is greater. The insurance must protect the State from claims that may arise out of or result from or are alleged to arise out of or result from the Contractor's or a Subcontractor's performance, including any person directly or indirectly employed by the Contractor or a Subcontractor, or any person for whose acts the Contractor or a Subcontractor may be liable.
- (b) The Contractor waives all rights against the State for the recovery of damages that are covered by the insurance policies the Contractor is required to maintain under this Section. The Contractor's failure to obtain and maintain the required insurance will not limit this waiver.
- (c) All insurance coverage provided relative to this Contract is primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State.
- (d) The State, in its sole discretion, may approve the use of a fully-funded self-insurance program in place of any specified insurance identified in this Section.
- (e) Unless the State approves, any insurer must have an A.M. Best rating of "A" or better and a financial size of VII or better, or if those ratings are not available, a comparable rating from an insurance rating agency approved by the State. All policies of insurance must be issued by companies that have been approved to do business in the State. To view the latest A.M. Best's Key Ratings Guide and the A.M. Best's Company Reports (which include the A.M. Best's Ratings) visit the A.M. Best Company internet web site at <http://www.ambest.com>.
- (f) Where specific coverage limits are listed in this Section, they represent the minimum acceptable limits. If the Contractor's policy contains higher limits, the State is entitled to coverage to the extent of the higher limits.

- (g) The Contractor must maintain all required insurance coverage throughout the term of this Contract and any extensions. However, in the case of claims-made Commercial General Liability policies, the Contractor must secure tail coverage for at least three (3) years following the termination of this Contract.
- (h) The minimum limits of coverage specified are not intended and may not be construed; to limit any liability or indemnity of the Contractor to any indemnified party or other persons.
- (i) The Contractor is responsible for the payment of all deductibles.
- (j) If the Contractor fails to pay any premium for a required insurance policy, or if any insurer cancels or significantly reduces any required insurance without the State's approval, the State may, after giving the Contractor at least 30 days' notice, pay the premium or procure similar insurance coverage from another company or companies. The State may deduct any part of the cost from any payment due the Contractor or require the Contractor to pay that cost upon demand.
- (k) In the event the State approves the representation of the State by the insurer's attorney, the attorney may be required to be designated as a Special Assistant Attorney General by the Michigan Attorney General.

The Professional firm's Errors and Omissions coverage shall include coverage for claims resulting from acts of forbearance that cause or exacerbate pollution and claims of bodily injury and property damage in the amount of \$1,000,000 minimum coverage per occurrence, \$3,000,000 annual aggregate. This insurance is required of all professional firms who conduct professional environmental services including, but not limited to, any of the following services:

- (i) Remedial System Design.
- (ii) Remediation Management.
- (iii) Feasibility Development and Implementation.
- (iv) Hydrogeological Evaluation.
- (v) Media Testing and Analysis.
- (vi) Subsurface and Geophysical Investigation.
- (vii) Other related activities as determined by the Department.

Required Limits	Additional Requirements
Commercial General Liability Insurance	
<u>Minimum Limits:</u> \$1,000,000 Each Occurrence Limit \$1,000,000 Personal & Advertising Injury Limit \$2,000,000 General Aggregate Limit \$2,000,000 Products/Completed Operations	Professional must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds using endorsement CG 20 10 11 85, or both CG 20 10 12 19 and CG 20 37 12 19.
Umbrella or Excess Liability Insurance	
<u>Minimum Limits:</u> \$2,000,000 General Aggregate	Professional must have their policy follow form.
Automobile Liability Insurance	
<u>Minimum Limits:</u> \$1,000,000 Per Accident	Professional must have their policy: (1) endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds; and (2) include Hired and Non-Owned Automobile coverage.
Workers' Compensation Insurance	
<u>Minimum Limits:</u> Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liability Insurance	
<u>Minimum Limits:</u> \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease.	
Professional Liability (Errors and Omissions) Insurance	
<u>Minimum Limits:</u> \$1,000,000 Each Occurrence \$2,000,000 Annual Aggregate <u>Deductible Maximum:</u> \$50,000 Per Loss	

Environmental and Pollution Liability (Errors and Omissions) ***	
<u>Minimum Limits:</u> \$1,000,000 Each Occurrence \$2,000,000 Annual Aggregate	Professional must have their policy: (1) be applicable to the work being performed, including completed operations equal to or exceeding statute of repose; (2) not have exclusions or limitations related to Transportation (upset overturn, spills during loading or unloading, Hazardous Materials Handling, and Non-Owned disposal site liability; and (3) endorsed to add "the State of Michigan, its departments, division, agencies, offices, commissions, officers, employees, and agents" as additional insured.

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Contractual Liability insurance for claims for damages that may arise from the Professional's assumption of liability on behalf of the State under Article VI concerning indemnification for errors, omissions, or negligent acts in the course of the professional service or other provision within this Contract to the extent that such kinds of contractual liability are insurable in connection with and subject to limits of liability not less than for the general liability insurance and the professional liability insurance and set forth in subsections (c) and (d) above.

Except where the State has approved a subcontract with other insurance provisions, the Professional must require any Consultant/Subcontractor to purchase and maintain the insurance coverage required in this Article. Alternatively, the Contractor may include a Consultant/Subcontractor under the Professional's insurance on the coverage required in that Section. The failure of a Consultant/Subcontractor to comply with insurance requirements does not limit the Professional's liability or responsibility.

Certificate of Insurance documents, acceptable to the State, shall be provided and filed with the Department prior to commencement of the Professional's Project services, unless otherwise approved in writing, and not less than 20 days before the insurance expiration date every year thereafter. Facsimile copies of the Certificate of Insurance will not be accepted. Certificate of Insurance documents must be either submitted hard copy or portable document file (.pdf). The Certificate of Insurance documents must specify on the certificate in the oblong rectangle space labeled "Description of Operations/Locations/Vehicles/Exclusions Added By Endorsement/Special Provisions/Special Items" the following items: **(1) The ISID Title; (2) The ISID Contract Number; and (3) The State of Michigan must be named as an "Additional Insured on the General Liability and Automobile Insurance Policy."** The Certificate of Insurance documents shall contain a provision that the Project insurance coverage afforded under the insurance policies for this Contract will not be modified or canceled without at least thirty (30) consecutive calendar days prior written notice, except for 10 days for non-payment of premium, to the State of Michigan, Department.

This Section is not intended to and is not to be construed in any manner as waiving, restricting, or limiting the liability of either party for any obligations under this Contract (including any provisions hereof requiring Professional to indemnify, defend and hold harmless the State).

The attached, Certificates of Insurance documents required for this Project shall be in force for this Project until the final payment by the State to the Professional is made and shall be written for not less than any limits of liability specified above. The Professional has the responsibility for having their consultant firms comply with these insurance requirements.

ARTICLE VI INDEMNIFICATION

- (a) To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from liability, including all claims and losses, and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest, and penalties), accruing or resulting to any person, firm or corporation that may be injured or damaged by the Professional in the performance of this Contract and that are attributable to the negligence or tortious acts of the Professional or any of its Subcontractors/Consultants, or by anyone else for whose acts any of them maybe liable.
- (b) Employee Indemnification: In any and all claims against the State of Michigan, its departments, divisions, agencies, boards, sections, commissions, officers, employees and agents, by any employee of the Professional or any of its Subcontractors/Consultants, the indemnification obligation under this Contract shall not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the Professional or any of its Subcontractors/Consultants under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in provisions, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other provisions.
- (c) Patent/Copyright Infringement Indemnification: To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest, and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that such action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the Professional or its Subcontractors/Consultants, or the operation of such equipment, software, commodity or service, or the use of reproduction of any documentation provided with such equipment, software, commodity or service infringes any United States patent, copyright, trademark or trade secret of any person or entity, which is enforceable under the laws of the United States.

In addition, should the equipment, software, commodity, or services, or its operation, become or in the State's or Professional's opinion be likely to become the subject of a claim of infringement, the Professional shall at the Professional's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if such option is not reasonably available to the Professional, (ii) replace or modify to the State's satisfaction the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if such option is not reasonably available to Professional, (iii) accept its return by the State with appropriate credits to the State against the Professional's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

Notwithstanding the foregoing, the Professional shall have no obligation to indemnify or defend the State for, or to pay any costs, damages or attorneys' fees related to, any claim based upon (i) equipment developed based on written specifications of the State; or (ii) use of the equipment in a configuration other than implemented or approved in writing by the Professional, including, but not limited to, any modification of the equipment by the State; or (iii) the combination, operation, or use of the equipment with equipment or software not supplied by the Professional under this Contract.

ARTICLE VII OWNERSHIP OF DOCUMENTS

All Project deliverables, including but not limited to: reports, Bidding Documents, Contract Documents, electronic documents and data, and other Project related documents, including the copyrights, prepared and furnished by the Professional shall become the property of the State of Michigan upon completion of the Project, completion and acceptance of the professional's work, or upon termination of the Contract. Project deliverables shall be delivered to the Department upon their request. The Professional shall have no claim for further employment or additional compensation as a result of this Contract requirement. The Professional may retain a copy of all Project documents for their files.

If the Professional is in default or breach of its obligations under this Contract, the State shall have full ownership rights of the Project deliverables, including Bidding Documents and Contract Documents, including all electronic data. If the Professional is in default or this Contract Agreement is terminated, the State shall not use the Contract Documents and deliverables of this Contract for completion of the Project by others without the involvement of other qualified Professionals who shall assume the professional obligations and liability for the Project work not completed by the Professional.

To the fullest extent allowed by law, the State releases the Professional, the Professionals Consultant(s) and the agents and employees of any of them from and against legal claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of the State's use of the Contract Documents other than in accordance with this Contract Agreement.

All Contract deliverables listed may be published or issued for informational purposes without additional compensation to the Professional. The Professional may not use any of the Contract Documents and Contract deliverables for any purpose that may misrepresent the professional services they provided.

The Professional shall retain full rights to the Contract Documents and deliverables and the right to reuse component information contained in them in the normal course of the Professional's professional activities.

The Contract deliverables, Contract Documents, or other documents produced under this Contract may be used by the Department, or others employed by the Department or State of Michigan, for reference in any completion, correction, remodeling, renovation, reconstruction, alteration, modification of or addition to the Project, without monetary compensation to the Professional.

The State of Michigan will not construct additional Projects or buildings based on the work of this Contract without notice to the Professional. Whenever renderings, photographs of renderings, photographs or models, or photographs of the Project are released by the State of Michigan for publicity, proper credit for design shall be given to the Professional, provided the giving of such credit is without cost to the State of Michigan.

ARTICLE VIII TERMINATION

The State may, by written notice to the Professional, terminate this Contract and/or any Assignments, in whole or in part at any time, either for the State's convenience or because of the failure of the Professional to fulfill their Contract obligations. Upon receipt of such notice, the Professional shall:

- a) Immediately discontinue all professional services affected (unless the notice directs otherwise), and
- b) Deliver to the State all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by the Professional in performing this Contract, whether completed or in process.

8.1 If the termination is for the convenience of the State, an equitable adjustment in the Contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed professional services.

8.2 If the termination is due to the failure of the Professional to fulfill their Contract obligations, the State may take over the work and prosecute the same to completion by Contract or otherwise. In such case, the Professional shall be liable to the State for any additional cost occasioned to the State thereby.

- 8.3 If, after notice of termination for failure to fulfill Contract obligations, it is determined that the Professional had not so failed, the termination shall be deemed to have been affected for the convenience of the State. In such event, adjustment in the Contract price shall be made as provided in Section 8.1 of this article.
- 8.4 The rights and remedies of the State provided in this article are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE IX SUCCESSORS AND ASSIGNS

This Contract shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns; provided, however, that neither of the parties hereto shall assign this Contract without the prior written consent of the other.

ARTICLE X GOVERNING LAWS

This Contract shall be construed in accordance with the current laws of the State of Michigan. Some Assignments to this Contract will be funded wholly or in part by the Federal Government through grant agreements and/or federal programs. The Professional must comply with such funding requirements along with any current applicable federal regulations in performing the tasks described in the Scope of Work, including but not limited to the following current federal regulations. The absence of reference to any law or regulation does not preclude its applicability to this Contract.

1. The Comprehensive Environmental Response Compensation and Liability Act of 1980 as amended CERCLA (The Superfund Act);
2. Section 306 of the Clean Air Act (42 U.S.C. 1857 (h));
3. Section 508 of the Clean Water Act (33 U.S.C. 1368);
4. Public Law 98-473 as implemented in the Department of the Interior, Bureau of Indian Affairs;
5. Executive Order 11738; Office of Management and Budget Circular A-87, "Cost Principles for State, Local, and Indian Tribal Governments."
6. 25 CFR Part 20; Financial Assistance and Social Services Programs
7. 40 CFR Part 31; Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments
8. 40 CFR Part 32 Subpart F; Drug-Free Workplace
9. 40 CFR Part 33; Participation by Disadvantaged Business Enterprises in United States Environmental Protection Agency Programs
10. 40 CFR Part 35; State and Local Assistance

11. 40 CFR Part 35 Subpart 0; Cooperative Agreements and Superfund State Contracts for Superfund Response Actions
12. 48 CFR Chapter 1 Part 31 Subpart 31.2; Contracts with Commercial Organizations.

ARTICLE XI NONDISCRIMINATION

In connection with the performance of the Project under this, the Professional agrees as follows:

- a) The Professional will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, age, sex (*as defined in Executive Directive 2019-09*), height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position. The Professional will provide equal employment opportunities to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position.

Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

- b) The Professional will, in all solicitations or advertisements for employees placed by or on behalf of the Professional, state that all qualified applicants will receive equal employment opportunity consideration for employment without regard to race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position.
- c) The Professional or their collective bargaining representative will send to each labor union or representative of workers with which is held a collective bargaining agreement or other Contract or understanding, a notice advising the said labor union or workers' representative of the Professional's nondiscrimination commitments under this article.
- d) The Professional will comply with the Elliot-Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2201 et seq; the Michigan Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 et seq; *Executive Directive 2019-09*; and all published rules, regulations, directives and orders of the Michigan Civil Rights Commission which may be in effect on or before the date of award of this Contract.
- e) The Professional will furnish and file nondiscrimination compliance reports within such time and upon such forms as provided by the Michigan Civil Rights

Commission; said forms may also elicit information as to the practices, policies, program, and employment statistics of the Professional and of each of their Consultant firms. The Professional will permit access to all books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain nondiscrimination compliance with this Contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Article 6, 1976 PA 453, as amended.

- f) In the event that the Michigan Civil Rights Commission finds, after a hearing held pursuant to its rules, that the Professional has not complied with the contractual nondiscrimination obligations under this Contract, the Michigan Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the State Administrative Board of the State of Michigan, which the State Administrative Board may order the cancellation of the Contract found to have been violated, and/or declare the Professional ineligible for future Contracts with the State and its political and civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the Professional complies with said order of the Michigan Civil Rights Commission.

Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the Professional is declared ineligible to Contract as a contracting party in future Contracts. In any case before the Michigan Civil Rights Commission in which cancellation of an existing Contract is a possibility, the State shall be notified of such possible remedy and shall be given the option by the Michigan Civil Rights Commission to participate in such proceedings.

- g) The Professional shall also comply with the nondiscrimination provisions of 1976 PA 220, as amended, concerning the civil rights of persons with physical or mental disabilities.
- h) The Professional will include, or incorporate by reference, the nondiscrimination provisions of the foregoing paragraphs a) through g) in every subcontract or Contract Order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission, and will provide in every subcontract or Contract Order that said nondiscrimination provisions will be binding upon each of the Professional's Consultant's or seller.

ARTICLE XII

CONTRACT CLAIMS AND DISPUTES

In any claim or dispute by the Professional which cannot be resolved by negotiation, the Professional shall submit the claim or dispute for an administrative decision by the Department of Technology, Management and Budget, Director of State Facilities Administration within thirty (30) consecutive calendar days of the end of the disputed negotiations, and any decision of the Director of State Facilities Administration may be appealed to the Michigan Court of Claims within one (1) year of the issuance of the Director's decision.

The Professional agrees that the Department's appeal procedure to the Director of State Facilities Administration is a prerequisite to filing a suit in the Michigan Court of Claims.

ARTICLE XIII DEFINITION OF TERMS

The definition of terms and conditions of this Contract are described and outlined in the following Articles I through XIV and attached appendices. The capitalized defined terms used in this Professional Services Contract shall have the following definitions:

ADDENDA: Written or graphic numbered documents issued by the Department and/or the Professional prior to the execution of the Construction Contract which modify or interpret the Project Bidding Documents, including drawings, and specifications, by additions, deletions, clarifications or corrections. The Addenda shall: (1) Be identified specifically with a standardized format; (2) Be sequentially numbered; (3) Include the name of the Project; (4) Specify the Project Index No., Project File No., the Contract Order No. Y, and a description of the proposed Addenda; and (5) Specify the date of Addenda issuance. As such, the Addenda are intended to become part of the Project Contract Documents when the Construction Contract is executed by the Professional's recommended lowest responsive, responsible qualified Construction Contractor.

An Addendum issued after the competitive construction Bid opening to those construction Bidders who actually submitted a Bid, for the purpose of rebidding the Project work without re-advertising, is referred to as a post-Bid Addendum.

AGENCY PROJECT MANAGER: The assigned staff of the Department or the State/client Agency authorized by the State to represent and act on behalf of the Project Director on a given Project and to thereby provide direction and assistance to the Construction Contractor. The Agency Project Manager may designate in writing a person to act on behalf of the Agency Project Manager when they are unable to perform their required duties or is away from the office. In such cases, the Agency Project Manager must notify the Construction Contractor and the Project Director.

AGENCY FIELD INSPECTOR: An employee of the State of Michigan under the direction of the State/client Agency who provides the on-site, Inspection of construction Projects for compliance with the study/design intent of the Professional firm's Contract Documents/drawings and specification requirements and the building construction codes. The Agency Field Inspector is the liaison between the Construction Contractor, the Professional, and the Agency Project Manager. The Agency Project Manager, or their Agency Field Inspector, has the authority to require the Professional to respond to and resolve study/design related problems, construction on-site field problems and to attend Project related meetings.

BID: A written offer by a construction Bidder for the Department. Project construction work, as specified, which designates the construction Bidder's base Bid and Bid price for all alternates.

BIDDER: The person acting directly, or through an authorized representative, who submits a competitive construction Bid directly to the Department.

BIDDING DOCUMENTS: The Professional's Project Contract Documents as advertised, and all Addenda issued before the construction Bid opening, and after the construction Bid opening, if the Project construction work is rebid without re-advertising. Bidding Documents shall consist of the Phase 500 - Final Design drawings and specifications, any Addenda issued, special, general, and supplemental conditions of the Construction Contract, and modifications, if any, to standard forms provided by the Department. Such forms consist of the Project advertisement, the instructions to Bidders, the proposal forms, general, supplemental, and any special conditions of the Construction Contract, and the form of agreement between the Department and the Construction Contractor for the Project work requirements.

BID SECURITY: The monetary security serving as guarantee that the Bidder will execute the offered Construction Contract or as liquidated damages in the event of failure or refusal to execute the Construction Contract.

BUDGET: The maximum legislatively authorized Budget amount to be provided by the State of Michigan and available for a specific purpose or combination of purposes to accomplish the Project for this Contract.

BULLETIN: A standard document form (DTMB-0485, Bulletin Authorization No. and the DTMB-0489, Instructions to Construction Contractors for Preparation of Bulletin Cost Quotations for Contract Change Orders) used by the Department to describe a sequentially numbered change in the Project under consideration by the Department and the Professional and to request the Construction Contractor to submit a proposal for the corresponding adjustment in the Contract price and/or Contract time, if any. These standard document forms are a part of the "DTMB-0460, Project Procedures" documents package.

CONSTRUCTION CONTRACT: A separate written Contract agreement between the Construction Contractor and the Department for the construction, alteration, demolition, repair, or rebuilding of a State/Client Agency building or other State property.

CONSTRUCTION CONTRACTOR: Any construction firm under a separate Contract to the Department for construction services.

CONSTRUCTION INSPECTION SERVICES: The Professional's field Inspections of the Project during the construction Phase of this Contract which includes but is not limited to: (1) Documenting the quantity and quality of all Project construction work and verifying that the Project construction work is properly completed; (2) Resolve Project problems that are affecting the Project construction work, certify payment requests, process Bulletins, Contract Change Order recommendations, and requests for information (RFI's) in a timely manner as prescribed in the Department's, "MICHSPEC 2001 Edition of The Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)" or the current Department, DTMB Short Form 401 - Proposal and Contract/Front-End Package for Small Projects for Professional Services Contractors (PSC) with General Conditions for Construction and Instructions to Bidders" as adopted and modified by the State of Michigan and incorporated into the Construction Contract; and the (3) Inspection of Project construction work completed or in progress by the Construction Contractor to determine and verify to the Department's Project

Director/Agency Project Manager and their Department Field Representative that the Project construction work is in compliance with the Professional's design intent and that the Project has been completed by the Construction Contractor in accordance with the Professional's Phase 500 - Contract Documents/drawings and specifications requirements.

The Professional shall provide sufficient Inspections of the Project during the construction Phase to administer the construction Phase field and office services as directly related to the degree of Project complexity, up to and including full-time field Inspections. Construction field Inspections shall occur as the construction field conditions and the Project may require and during the regularly scheduled monthly progress and payment meetings.

The Professional shall use for their construction field Inspection services, only personnel having professional expertise, experience, authority, and compatibility with departmental procedures as the Department may approve. The Professional agrees that such characteristics are essential for the successful completion of the Project. Such individuals shall be replaced for cause where the Department determines and notifies the Professional, in writing, of their unacceptable performance.

CONSULTANT: Any individual, firm, or employee thereof, not a part of the Professional's staff, but employed by the Professional and whose professional service cost is ultimately paid by the State of Michigan, either as a direct cost or authorized reimbursement. This includes the recipient(s) of Contract Orders for material, support, and/or technical services. Also, included are persons and firms whose management and/or direction of services are assigned to the Prime Professional as may be provided elsewhere in this Contract.

CONTRACT CHANGE ORDER: A standard document form (DTMB-0403) issued and signed by the State of Michigan and signed by the Professional which amends the Project Design Professional's Contract Documents for changes in the Project/Program Statement or an adjustment in Contract price and/or Contract time, or both.

CONTRACT DOCUMENTS: The Professional's Phase 100 – Study, Final Report and Phase 500 - Final Design plans/drawings, specifications, Construction Contract, instructions to construction Bidders, proposal, Bidding Documents, agreement, conditions of the Contract, payment bond, performance/labor and material bond, prevailing wages, all Addenda, and attachments as may be necessary to comprise a Construction Contract for the Project. Specifications for this Contract will be prepared for Division 00 through 49, in the current version MasterFormat Outline by the Construction Specifications Institute (C.S.I.), as appropriate for the Project.

CONTRACT MODIFICATION: A form (DTMB-0410) amending the Contract signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from changes in the Project/Program Statement or previously unknown on-site field conditions as approved by the Department will be compensated to the Professional by way of the Contract Modification in accordance with the Article II, Compensation text of this Contract.

Any Contract Modification of this Professional Services Contract must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the Department may require. No Contract Modification will be approved to compensate the Professional for correcting, or for responding to claims or litigation for, the Professional's Phase 100 – Study, Final Report and Phase 500 - Contract Documents study/design errors, omissions or neglect on the part of the Professional.

CONTRACT ORDER: A form (DTMB-0402) issued and signed by the State of Michigan authorizing a Professional to: (1) Begin to incur Project expenses and proceed with the Project on-site; and (2) Provide professional services for the fee amount designated in the Phases of the Contract Order. Issuance of the DTMB-0402 certifies that: (1) The State will enter into a Professional Services Contract for the professional services described in the various Phases of this Contract; and that (2) The proper three (3) sets of Certificate of Insurance documents have been received and accepted by the State along with the approval and signing of the Professional's Professional Services Contract by the SFA, DCD Director.

DEPARTMENT: The Department of Technology, Management and Budget, Facilities and Business Administration, Design and Construction Division. The Department will represent the State of Michigan in all matters pertaining to this Project. This Professional Services Contract will be administered through the Department on behalf of the State of Michigan and The State/Client Agency.

DESIGN MANUAL: Provides the Professional with information regarding the Department's current "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" review process requirements regarding the uniformity in Contract materials presented to it by the Professional and the State/Client Agency(ies). This manual contains the following noted standards, instructions, and procedures information for: (1) General instructions for planning documents from Phase 100-Study through Phase 500-Final Design; (2) Net and gross area/volume; (3) Project cost format; (4) Outline architectural and engineering specifications; (5) Specifications in documentation Phase; (6) Instructions for proposal; (7) Bidders questionnaire; and the (8) Project job sign.

DIRECTOR: The Director of the Department of Technology, Management and Budget or their authorized State of Michigan representative.

DIRECTOR-SFA: The Director of the Department of Technology, Management and Budget, State Facilities Administration or their authorized State of Michigan representative.

DEPARTMENT FIELD REPRESENTATIVE: An employee of the State under the direction of the Department who provides the Inspection of construction Projects for compliance with the design intent of the Professional's Phase 500 - Contract Documents/architectural and/or engineering drawings and specification requirements and the building construction codes. The Department Field Representative is the liaison between the Construction Contractor, the Professional, and the Project Director/Agency Project Manager. The Project Director/Agency Project Manager, or their Department Field Representative, has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project

meetings. Unless delegated by specific written notice from the Department, the Department Field Representative has no authority to order any changes in the Project scope of work or authorize any adjustments in Contract price or Contract time.

INSPECTION: The Professional and their Consultant firm's on-site and/or off-site examination of the Project construction work completed or in progress by the Construction Contractor to determine and verify to the Department's, Project Director/Agency Project Manager and their Department Field Representative that the quantity and quality of all Project construction work is in accordance with the design intent of the Professional's Phase 500 - Contract Documents/ drawings and specifications requirements.

KEY PRINCIPAL PERSONNEL/EMPLOYEE: An individual employee of a Professional who is essential for the successful completion of the Project.

NOTICE OF INTENT TO AWARD: A written notice to the Construction Contractor, by the Department accepting the Professional's written recommendation to award the construction Bid to the lowest responsive, responsible qualified construction Bidder. The Notice of Intent to Award letter will also designate the Contract price and itemize the alternates that the Department, at its sole discretion has accepted.

PHASE: A discretely distinguishable step necessary to produce the Project in the course of the Professional providing study, design and construction administration services.

PRIME PROFESSIONAL SERVICES CONTRACTOR/PROFESSIONAL: An individual, firm, partnership, corporation, association, or other legal entity who is legally permitted by law to sign and seal final design construction Contract Documents and licensed under the State of Michigan's professional licensing and regulation provisions of the Occupational Code (State Licensing Law), Act 299 of the Public Acts of 1980, Article 20, as amended, to practice architecture, engineering, environmental engineering, geology, civil, land surveying, or landscape architecture services in the State of Michigan.

The Prime Professional Services Contractor/Professional is also legally permitted by the State of Michigan's regulation provisions of the State Construction Code, Act 230 of the Public Acts of 1972, as amended, and designated in a Construction Contract by the Department to recommend construction progress payments to the Construction Contractor.

PROJECT: Any new construction, existing site, new utilities, existing building renovation, roof repairs and/or removal and replacement, additions, alteration, repair, installation, construction quality control and material testing services, painting, decorating, demolition, conditioning, reconditioning or improvement of public buildings, works, bridges, highways or roads authorized by the Department that requires professional study/design services as part of this Contract.

PROJECT COST: The total Project cost including, but not limited to, site purchase, site survey and investigation, hazardous material abatement, construction, site development, new utilities, telecommunications (voice and data), professional fees, construction quality control and material testing services, testing and balancing services, furnishings, equipment, plan(s)/drawing(s) design code compliance and plan review approval fees and all other costs associated with the Project.

PROJECT DIRECTOR: The professional licensed employee of the Department who is responsible for directing and supervising the Professional's services during the life of this Contract. The Project Director, or their Department Field Representative, has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project related meetings.

PROJECT/PROGRAM STATEMENT: The Project/Program Statement is provided by the Department and defines the scope of the problem, describes why this Project is desirable, and provides a preferred resolution of the problem.

PROJECT TEAM: The Professional, the Project Director/Agency Project Manager, Department Field Representative, a representative of the State/Client Agency, and others as considered appropriate by the Department.

PUNCH LIST: A list of minor construction Project items to be completed or corrected by the Construction Contractor, any one of which do not materially impair the use of the Project work, or the portion of the Project work inspected, for its intended purpose. A Punch List shall be prepared by the Professional upon having made a determination that the Project work, or a portion of the Project construction work inspected, in concert with the Professional, the Construction Contractor, the Department, the Project Director/Agency Project Manager and their Department Field Representative, and any construction manager, is substantially complete and shall be attached to the respective DTMB-0455, Certificate of Substantial Completion form. This standard document form is a part of the "DTMB-0460, Project Procedures" documents package.

SOIL EROSION AND SEDIMENTATION CONTROL: The planning, design and installation of appropriate Best Management Practices (as defined by the most current version of the Department's Soil Erosion and Sedimentation Control Guidebook) designed and engineered specifically to reduce or eliminate the off-site migration of soils via water runoff, wind, vehicle tracking, etc. and comply with the Soil Erosion and Sedimentation Control in the State of Michigan as regulated under the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act, Part 91 – Soil Erosion and Sedimentation Control. Soil Erosion and Sedimentation Control associated with this Contract will be monitored and enforced by the Department of Technology, Management and Budget, State Facilities Administration, Soil Erosion and Sedimentation Control Program.

STATE: The State of Michigan in its governmental capacity, including its departments, agencies, boards, commissions, officers, employees, and agents. Non-capitalized references to a state refer to a state other than the State of Michigan.

STATE/CLIENT AGENCY: A Department of the State of Michigan, for whose use the Project will ultimately serve, which requires professional design services.

SUBSTANTIAL COMPLETION: The form (DTMB-0445) stating that the Project work, or a portion of the Project work eligible for separate Substantial Completion, has been completed in accordance with the design intent of the Professional's Contract Documents to the extent that the Department and the State/Client Agency can use or occupy the entire Project work, or the designated portion of the Project work, for the use intended without any outstanding, concurrent work at the Project work site, except as may be required to complete or correct the Project work Punch List items.

SUSTAINABLE DESIGN: The Professional's use of a balance of appropriate materials, products and design methods that reduce the impact to the natural ecosystems and be within the Budget constraints of the Project. Sustainable Design shall be used wherever possible by the Professional in their Project design and an itemized list shall be provided with the Professional's Contract Documents that identifies the processes and products.

TASK: Shall mean the following: (1) A quantifiable component of design related professional study/design Task services required to achieve a Phase of the Project; (2) The most manageable sub-element within a study/design Phase; (3) A unique item of work within a study/design Phase for which primary responsibility can be assigned; and (4) Has a time related duration and a cost that can be estimated within a study, design, and construction Phase.

ARTICLE XIV COMPLETE AGREEMENT / MODIFICATION

This Professional Services Contract constitutes the entire agreement as to the Project between the parties. Any Contract Modification of this Contract and the Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for the Professional firm's final design Contract Documents/study/design errors, omissions or neglect on the part of the Professional.

APPENDIX 1

PROJECT/PROGRAM STATEMENT

PROJECT STATEMENT

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design and Construction Division
3111 West St. Joseph Street
Lansing, Michigan 48909

FILE NUMBER Various	PROPOSAL DUE DATE Thursday, January 12, 2023, at 2:00 p.m., EASTERN
CLIENT AGENCY Department of Environment, Great Lakes, and Energy (EGLE)	
PROJECT NAME AND LOCATION 2023 Environmental Indefinite Services Indefinite Delivery (ISID)	
PROJECT ADDRESS (if applicable) Various	
CLIENT AGENCY CONTACT Bridget Walsh	TELEPHONE NUMBER (517) 420-6379
DTMB - DCD PROJECT DIRECTOR Indumathy Jayamani	TELEPHONE NUMBER (517) 582-1089

WALK-THROUGH INSPECTION DATE, TIME, AND LOCATION:

There is no Pre-Proposal Meeting required.

☐ **MANDATORY** (Check box if Mandatory)

☐ **LEIN Check** (Department of Corrections ONLY) All contractor / vendor representatives attending Preproposal Walk Through Meeting must submit a Vendor / Contractor LEIN Request form five business days prior to the meeting date (See the attached Vendor/Contractor LEIN Request Form). Send the LEIN Request form, filled and signed, by email to Daniel T. Smith at email address: smithD76@michigan.gov. The email "Subject" must include (facility name, project name, date, and time of Pre-Proposal Walk Through Meeting).

PROJECT DESCRIPTION/SERVICES REQUESTED

Provide professional environmental ISID services for a variety of State or Federally funded cleanup sites. The professional will be required to effectively perform tasks at assigned contaminated and/or hazardous waste sites through appropriate screening/investigation and/or remedial/corrective action plan to abate human health or environmental risks or bring an assigned site to an acceptable closure in accordance with the applicable Part 201 or Part 213 of the Michigan Natural Resources and Environmental Protection Act (NREPA) Public Act 451 of 1994, as amended and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and other relevant state and federal statutes and requirements. The Professional is required to refer to State and Federal statutes, procedures, guidelines, and the administration rules when providing the services or entering contracts with sub-consultants / subcontractors to provide the services. The Professional MUST upload their proposal to the State of Michigan Procurement website (SIGMA VSS). The Professional must use the attached appropriate forms to indicate the billing rates and questionnaires. The Professional may check one or more of the project types that they are interested in providing services. The State of Michigan reserves the right not to award the contract(s) or award the contract(s) to one or more firms.

Please NOTE:

- Proposal responses MUST be uploaded to SIGMA VSS. Please enter the total cost for all phases as the bid amount.
- Firms should only submit one (1) attachment (being less than 6 MB) for proposal submission. The attachment is to be the technical and cost proposal combined.
- Do not wait until just before the 2:00 p.m. solicitation deadline to submit your proposal response. SIGMA VSS will not allow a proposal to be submitted after 2:00 p.m., even if a portion of the

proposal response has been uploaded.

- If you experience issues or have questions regarding your electronic submission, you must contact the SIGMA Help Desk for assistance prior to the 2:00 p.m., solicitation deadline. You may contact the SIGMA Help Desk by telephone at 517.284.0540 or toll-free at 888.734.9749. You may also email the SIGMA Help Desk at sigma-procurement-helpdesk@michigan.gov
- Please email the Design and Construction Contract Specialists if you are having SIGMA VSS issues. Please include your SIGMA ticket number and any supporting documentation (i.e., screenshots) to Anne Watros (WatrosA@michigan.gov) and Don Klein (KleinD4@michigan.gov).
- You may be asked by our contract specialists to email your proposal. Emailed submissions will require DCD approval and will be handled on a case-by-case basis.
- Approved emailed submissions MUST be received prior to 2:00 p.m. deadline to be considered responsive and responsible.
- Responses should not be emailed to the Project Director.

NIGP CODES

90629; 91842; 91843; 92535; 92577; 92615; 92623; 92629; 92630; 92645; 92652; 92658; 92678; 92683; 92685; 92690; 92691; 92693; 92696; and 96273

DESIRED SCHEDULE OF WORK

Dependent on the assigned project

ACCEPTING RFP QUESTIONS UNTIL:

Please do not submit online questions via SIGMA VSS. ALL questions should be emailed to Indumathy Jayamani at jayamanii1@michigan.gov address no later than 2:00 p.m., Eastern on December 16, 2022.

REFERENCE STANDARDS: This project will comply with all codes, standards, regulations, and workers' safety rules that are administered by federal agencies (EPA, OSHA, and DOT), state agencies (DHHS, EGLE, DNR, and MIOSHA), and any other local regulations and standards that may apply.

This form is required to be a part of the professional service contract. (Authority: 1984 PA 431)



MINOR STATE CAPITAL OUTLAY PROJECTS
REQUEST FOR PROPOSALS
FROM
PROFESSIONAL SERVICE CONTRACTORS

(Authority PA 431 of 1984)

For Indefinite Scope Indefinite Delivery
Not-to-Exceed Fee, Billable-Rate

DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
Request for Proposal for
2023 Indefinite Scope Indefinite Delivery (ISID) for Environmental Services
Various Locations, Michigan

PROPOSAL DUE DATE: Thursday, January 12, 2023, 2:00 p.m., Eastern Time

ISSUING OFFICE

Department of Technology, Management & Budget
State Facilities Administration
Design and Construction Division



Minor State Capital Outlay Projects REQUEST FOR PROPOSALS

Part I - Technical Proposal

Part II – Cost Proposal

Professional Services for DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET 2023 Indefinite Scope Indefinite Delivery (ISID) Contract for Environmental Services Various Locations, Michigan

SECTION I GENERAL INFORMATION

I-1 Purpose

This Request for Proposals invites the prospective professional service contractor (Professional) to prepare a qualifications statement and proposal for an Indefinite Scope Indefinite Delivery (ISID) contract. ISID contracts provide the State of Michigan with a simple and streamlined qualifications-based selection process for obtaining professional environmental services for minor, emergency and / or routine investigation and remediation projects. Professionals holding an ISID contract may be contacted by a Department of Technology, Management and Budget (DTMB), State Facilities Administration (SFA), Design and Construction (DCD) Project Director to provide a specific proposal of services and fees for a particular project, which, if found acceptable, will then be assigned to that Professional under their ISID contract. Services requested may include, but not be limited to investigate, evaluate, design and supervise the implementation of abatements / remedies at assigned sites of environmental contamination under Parts 201 and 213 of the Michigan Natural Resources and Environmental Protection Act (NREPA) Public Act 451 of 1994, as amended, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (42 U. S. C. Chapter 103) and other relevant state / federal statutes and requirements. The services to be completed should encompass as a minimum the following phase(s) from DTMB's Sample Standard ISID Contract for Professional Environmental Services.

Projects will be located statewide, within both developed and undeveloped areas. Proposing firms must indicate regions and service areas in which they are willing to provide services, (refer to Questionnaire Articles 2 and 3, Project Types and Service Offered and Project Location, respectively).

The ISID contracts will supplement, but not replace, standard requests for proposals or qualifications as a method for obtaining professional services.

The 2023 Professional Environmental Services ISID contract will be limited to a term of three base years and one option year for assignments. A firm holding an ISID contract may not re-propose until their contract term is exhausted.

Firms with ISID contracts are eligible to participate in MIDeal, a cooperative purchasing program, local units of government, K-12 schools, state colleges and universities, and not for profit hospitals, may, if the firm agrees to participate, contract with an ISID contract holder at the billable rates specified in the ISID contract.

Please Note:

1. FIRMS HOLDING ISID CONTRACTS ARE NOT GUARANTEED ANY ASSIGNMENTS

If DTMB, Design and Construction Division (DCD) determines that a particular project is suited to the ISID contracting method, The DCD Project Director will select an ISID Professional to provide a specific proposal of services and fee for that project. If the proposal is acceptable, the project will be assigned to that Professional under their ISID contract.

DCD reserves the option of requesting such proposals from more than one professional for a particular project.

ISID contracts may include, but not be limited to, the following phase(s) from DTMB's attached Sample Standard ISID Contract for Professional Environmental services.

Phase—

- 100 Study
- 300 Schematic Design
- 400 Preliminary Design
- 500 Final Design
- 600 Construction Administration - Office Services
- 700 Construction Administration - Field Services
- 900 Operation and Maintenance Management – Remediation Facility

The minimum professional qualifications to complete the scope of work for this project are demonstrated experience in the successful planning and execution of similar projects in full accordance with all applicable Local, State, and Federal regulations.

I-2 Project/Program Statement

See attached project/program statement for more detailed information. The Professional, by submitting a Technical (Part I) and Cost (Part II) Proposal to DTMB for evaluation, states that they can and will provide complete services when an individual project is assigned to them.

No increase in compensation to the Professional will be allowed unless there is a material change made to the scope of work of the project/program statement and the change to the project/program statement is approved in writing by DTMB, State Facilities Administration (SFA), Design and Construction Division (DCD).

I-3 Issuing Office

This RFP is issued by the Department of Technology, Management and Budget (DTMB), on behalf of the State of Michigan and its Client Agencies. PROPOSALS SHALL BE RETURNED TO THE ISSUING OFFICE via State of Michigan Procurement website – SIGMA VSS.

The point of contact for all other items in this Request for Proposal is:

Indumathy Jayamani, Project Director
Department of Technology, Management and Budget
State Facilities Administration, Design and Construction Division
Telephone Number: (517) 582-1089
Email: jayamani1@michigan.gov

I-4 Contract Award

Professionals are requested to submit a two-part proposal, Technical Proposal - Part I, including a Qualifications Questionnaire, and Cost Proposal - Part II. Proposals will be evaluated by an Ad Hoc Advisory Committee based on the Technical Portion - Part I eighty percent (80%) and the Cost Proposal - Part II twenty percent (20%) with the following tentative percentage breakdown:

The Technical Portion will include the following breakdown:

Capacity and Quality	30%
Experience	30%
Personnel Staffing	30%
Business Organization and Contract Understanding	5%
Special Factors	5%

The Cost Portion will include the following breakdown:

Professional Billing Rates	75%
Billing Rate Increase	25%

The professional firm must complete the Professional Questionnaire (Appendix III) and select the Project Types and Project Locations they wish to be considered for. Provide attachments illustrating a minimum of three (3) examples, with references, of successful projects performed in the last five years for each item selected. Please include all the submitted resumes for all Project Types under one (1) appendix.

DTMB will offer a contract to several professional firms recommended by the Ad Hoc Advisory Committee after evaluation of the proposals. Recommendation is expected within forty-five (45) days following the due date of the proposal.

The Professional must include signed PSC Certification forms and the Addendum Acknowledgment form located at the end of this RFP as part of your proposal response.

I-5 Rejection of Proposals

The State of Michigan reserves the right to reject any or all proposals, in whole or in part, received because of this Request for Proposals.

I-6 Incurring Costs

The State of Michigan is not liable for any cost incurred by the Professional prior to acceptance of a proposal and the award and execution of a contract and issuance of the state's contract order.

I-7 Mandatory Pre- Proposal Meeting

NO MANDATORY PRE-PROPOSAL MEETING will be conducted by the Issuing Office for this Request for Proposal.

Questions that arise because of this RFP **MUST BE EMAILED to Indumathy Jayamani at jayamani1@michigan.gov** to the issuing office no later than **Friday, December 16, 2022, at 2:00 p.m.**, Eastern time (ET). If it becomes necessary to amend any part of this RFP, addenda will be posted on the SIGMA VSS website.

I-8 Responsibilities of Professional

The Professional will be required to assume responsibility for all professional services offered in their proposal whether they possess them within their organization or not. Further, the State of Michigan will consider the Professional to be the sole point of contact regarding contractual matters, including payment of all charges resulting from the contract. The prime professional shall possess a license to practice in the State of Michigan pursuant to the Occupational Code (PA 299 of 1980).

I-9 Proposals

The professional must submit a complete, straightforward response to this Request for Proposal. The proposal should describe the professional's ability to meet the requirements of the Request for Proposal.

The proposal must be submitted electronically through the State of Michigan Procurement System (SIGMA VSS). No other distribution of proposals will be made by the Professional. To be considered responsible and responsive, proposals must be uploaded to SIGMA VSS **on or before 2:00 p.m., Eastern time (ET), on Thursday, January 12, 2022.** The proposal must be signed by an official authorized to bind the professional firm to its provisions. **NO FACSIMILES OR E-MAILS OF THE REQUEST FOR PROPOSAL WILL BE ACCEPTED.**

The proposal and attachments must be fully uploaded and submitted prior to the proposal deadline. **Please do not wait until the last minute to submit a proposal**, as the SIGMA VSS system **will not** allow a proposal to be submitted after the proposal deadline identified in the solicitation, even if a portion of the proposal has been uploaded.

SIGMA has a maximum size limit on file uploads. When uploading, your attachment(s) the attachment must be 6mb or less.

Also, when entering proposal amount, please enter the total cost amount as \$1.00. Bidder's failure to submit a proposal as required may result in being deemed nonresponsive.

Questions on vendor registration, proposal submissions, or navigation in the SIGMA VSS system can be answered by contacting the SIGMA Help Desk either by telephone at 517.284.0540 or toll free at 888.734.9749 or by email at sigma-procurement-helpdesk@michigan.gov

SECTION II PROPOSAL FORMAT - PART I – TECHNICAL

The proposal must be submitted in the format outlined below. Paginate proposals and ensure that the proposals refer specifically to the project at hand. Proofread proposals for language and mathematical errors. The items shown below are considered in the Ad Hoc Committee proposal review of technical qualifications.

II-1 General Information and Project Team

State the full name, address, and SIGMA Vendor Number of the organization and, if applicable, the branch office, consultants or other subordinate elements that will provide or assist in providing the service. Indicate whether you operate as an individual, partnership, or corporation. If a corporation, include the state in which you are incorporated. State whether you are licensed to operate and practice in the State of Michigan.

II-2 Understanding of Project and Tasks

The professional must demonstrate an understanding of the project being considered and the professional services needed to achieve the state's goal. State your understanding of the project requirements and summarize your plan for accomplishing the project. Outline your experience with similar projects, sites, and clients as examples.

Explain how your firm or project team is the best suited to provide the services required for this project and would provide the best value to the State of Michigan for this work.

II-3 Personnel

The professional must be able to staff a project team which has the qualifications and expertise necessary to undertake the project. Include the full names of all personnel by classification that will be employed in the project.

Indicate which of these individuals you consider to be "Key Personnel" for the successful completion of these project types, identify them by position and classification and provide their resumes.

The Professional must identify all Key Personnel that will be assigned to this contract in the table below which includes the following:

- a. Name and title of staff that will be designated as Key Personnel.
- b. Key Personnel years of experience in the current classification.

- c. Key Personnel's roles and responsibilities, as they relate to this RFP, if the Professional is successful in being awarded the Contract. Descriptions of roles should be functional and not just by title.
- d. Identify if each Key Personnel is a direct, or consultant employee.
- e. Identify where each Key Personnel staff member will be physically located (city and state) during the Contract performance.

The Professional must provide detailed, chronological resumes of all proposed Key Personnel, including a description of their work experience relevant to their proposed role as it relates to the RFP. Qualifications will be measured by education and experience with particular emphasis to experience on projects similar to that described in the RFP.

Provide an organization chart outlining authority and communication lines for each professional firm, including Key Personnel, including sub-consultants, client agency, and DTMB.

II-4 Management Summary, Work Plan, and Schedule

This is for reference only and will be required for future assignments, but not required at this time. The professional must outline their work plan and methodology so that it is understood what services and deliverables will be provided, and the quality of the services and deliverables as well. Describe in detailed narrative form your plan for accomplishing the project. Describe clearly and concisely each professional task, event, and deliverable required for project completion. Do not simply reiterate language and tasks from the DTMB Professional Services Contract. Describe your constructability review and quality control plan. Include a detailed time sequenced – related but undated schedule, showing each event, task, and phase in your work plan. Allow time in the assignment schedule for the Owner's review.

II-5 Questionnaire

The professional firm submitting a proposal must complete the Professional Questionnaire (refer to attached fillable form in Microsoft Word format). This questionnaire must be accompanied by a narrative addressing the items above.

NOTE: Any information provided in one location can be referenced as needed in other locations

II-6 References

Provide references, with contact information of previous clients, particularly for similar projects. Outline your experience with similar projects, sites, and contacts.

SECTION III PROPOSAL FORMAT - PART II - COST

III-1 Instructions and Information – Billable Rate

Outline the billable rates for the Professional's staff members who may be assigned to these projects. Specific proposals for individual projects will be obtained at the time of individual project assignment and shall correspond to all phases/tasks of the work plan requested at that time.

If sub-consultants are used for a particular assigned project, their fees shall be provided. **No mark-up** of the sub-consultants' fees or billing rates will be allowed.

Reimbursable Expenses: The State will reimburse the Professional for the actual cost of printing and reproduction of project deliverables such as surveys, reports, and bidding documents (drawings and specifications).

The State will also reimburse for U.S. Mail regular shipping or postage, soil borings, and any required laboratory testing. **No mark-up** of reimbursable expenses will be allowed.

The Professional firm's hourly billing rate shall be the actual amount paid for the employee services on the Project including fringe benefits, vacations, sick leave, other indirect costs, and profit. The Professional firm's hourly billing rates shall not change during the life of this Contract without written approval by the Department. See attached, **Overhead Items Allowed for the Professional Services Contractor Firm's Hourly Billing Rate Calculation**, for the guide to overhead items allowed for the professional services contractor firm's hourly billing rate calculation. Reimbursement for the Project/Program Statement scope of work requirements will be provided only for Department approved items authorized for reimbursement compensation in this Contract. The State will not reimburse the Professional for downtime, or for personnel involved in downtime due to mechanical problems or failure of Professional's or sub-consultant/subcontractor equipment.

Project related travel expenses (mileage, meals, lodging) for Projects **more than** one hundred (100) miles in one-way from the Professional's nearest office shall be treated as an authorized reimbursable expense at the State of Michigan's current travel rates based on DTMB's Vehicle and Travel Services Travel Rate.

III-2 Identification of Personnel and Estimated Compensation

Provide compensation information for the Professional as well as any Sub-consultants. Note that employees of a separate professional firm or consultant, if proposed, should also be included, and noted.

A. Primary Professional and Sub-consultant(s) – Position, Classification and Employee Billable Rate Information

Using the format of Form II-2-A (attached), identify the service being provided and the Professional's or Sub-consultant's employee(s) names and position classifications.

See Appendix II for guidelines for position classifications. For each employee, list the current hourly billable rate for each year covered under this proposal. Hourly billing rates shall include any anticipated pay increases over the life of the Professional's three-year ISID contract duration. Sub-consultant fees will be included in individually assigned project contracts as not-to-exceed reimbursable amounts.

For individual assigned projects, the proposal will identify the estimated cost for each task.

The total of all phases/tasks shall become the Professional's maximum not-to-exceed cost for the assigned project. Compensation for each phase will be in accordance with the attached sample contract Article II – Compensation.

The following items B, C, and D will be required only at the time a proposal for an individual assigned project is requested.

Forms II-2-B, II-2-C, and II-2-D are for reference only and will be required for future assignments. These forms are not required for this proposal at this time.

A. Fee with Anticipated Hours by Phase – for Individual Assigned Projects

Using the format of Form II-2-B, identify for each phase the estimated hours for each employee and include the billable rate for each employee. Provide totals.

B. Reimbursable Expenses – for Individual Assigned Projects

Using the format of Form II-2-C, identify the phase number, firm name, and description of sub-consulting services, and/or description of all reimbursable direct expenses expressed as a not-to-exceed amount (travel over 100 miles one-way, printing, tests, etc.). Provide totals.

C. Total, Summarized by Phase – for Individual Assigned Projects

Using the format of Form II-2-D, provide a total of the fees and reimbursable expenses, by phase, as outlined in items B and C above. The total of all phases shall become the Professional's maximum not-to-exceed contract for all design services. Compensation for each phase will be in accordance with the "Sample Standard ISID – Environmental Contract for Professional Services."

Use the attached forms to establish your total compensation and trade contract reimbursables.

The following instructions are to be used by the Professional Services Contractor firms to determine the hourly billing rate to use on State of Michigan Projects.

The Professional's Consultant must submit a separate hourly billing rate for the professional consultant services they will provide for State of Michigan Projects. No mark – up of the Professional's Consultant services hourly billing rates will be allowed.

The Department will reimburse the Professional for the actual cost of printing and reproduction of the Contract Bidding Documents, soil borings, surveys and any required laboratory testing services and use of field equipment. **No mark-up of these Project costs will be allowed if services are performed in house.**

2023 HOURLY BILLING RATE

Based on 2022 Expenses

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICES CONTRACTOR FIRM'S HOURLY BILLING RATE CALCULATION

SALARIES:

Principals (Not Project
Related)

Clerical / Secretarial

Technical (Not Project
Related)

Temporary Help Tax

Technical Training

Recruiting Expenses

EMPLOYEE BENEFITS:

Hospitalization

Employer's

Federal Insurance

Contributions Act (FICA)Tax

Unemployment Insurance

Federal Unemployment

Disability

Worker's Compensation

Vacation

Holidays

Sick Pay

Medical Payments

Pension Funds

Insurance - Life

Retirement Plans

INSURANCE:

Professional Liability Insurance

Flight and Commercial Vehicle

Valuable Papers

Office Liability

Office Theft

Premises Insurance

Key – Personnel Insurance

Professional Liability Insurance

TAXES:

Franchise Taxes

Occupancy Tax

Unincorporated

Business Tax

Single Business Tax

Property Tax

Income Tax

SERVICES (PROFESSIONAL)

Accounting

Legal

Employment Fees

Computer Services Bond)

Research

Project / Contract Bond

EQUIPMENT RENTALS:

Computers

Typewriter

Bookkeeping

Dictating

Printing

Furniture and Fixtures

Instruments

OFFICE FACILITIES:

Rents and Related
Expenses
Utilities
Cleaning and Repair

LOSSES:

Bad Debts (net)
Uncollectible Fee
Thefts (not covered by
Project / Contract)
Forgeries (not covered by
Project / Contract)

FINANCIAL:

Depreciation

SUPPLIES:

Postage
Drafting Room
Supplies
General Office
Supplies
Library
Maps and Charts
Magazine
Subscriptions

**PRINTING AND
DUPLICATION:**

Specifications (other than
Contract Bidding documents)
Drawings (other than
Contract Bidding documents)
Xerox / Reproduction
Photographs

**SERVICES
(NONPROFESSIONAL):**

Telephone and Telegram
Messenger Services

TRAVEL:

All Project – Related
Travel*

MISCELLANEOUS:

Professional Organization
Dues for Principals and
Employees
Licensing Fees

II-2-A. Position, Classification and Employee Billing Rate Information

Firm Name

XYZ, Inc.

Yearly Hourly Billing Rate Increase

~2%

Position/Classification				
	Year 2023	Year 2024	Year 2025	Year 2026
Principal/Project Manager**	\$100.00	\$105.00	\$110.00	\$116.00
Senior Architect	\$100.00	\$105.00	\$110.00	\$116.00
Quality Control/Assurance	\$100.00	\$105.00	\$110.00	\$116.00
Licensed Surveyor**	\$90.00	\$95.00	\$99.00	\$104.00
Project Engineer**	\$90.00	\$95.00	\$99.00	\$104.00
Mechanical Engineer**	\$90.00	\$95.00	\$99.00	\$104.00
Sr. Structural Engineer	\$80.00	\$84.00	\$88.00	\$92.00
Electrical Engineer	\$80.00	\$84.00	\$88.00	\$92.00
Scientist/Surveyor	\$65.00	\$68.00	\$71.00	\$75.00
Staff Engineer	\$65.00	\$68.00	\$71.00	\$75.00
Staff geologist	\$65.00	\$68.00	\$71.00	\$75.00
CAD Operator	\$75.00	\$79.00	\$83.00	\$87.00
Technician	\$65.00	\$68.00	\$71.00	\$75.00
Field Technician	\$50.00	\$53.00	\$56.00	\$59.00
Technical Support	\$35.00	\$37.00	\$39.00	\$41.00

*Billing Rate will be in accordance with the attached guideline page for instructions regarding the "Overhead Items used for Professional Billing Rate Calculation," and the "Sample Standard Contract for Professional Services," Article 5, Compensation Text.

** Key Project Personnel

II-2-B. Fee with Anticipated Hours and Billing Rate

		TOTAL HOURS	BILLING RATE	TOTAL
	POSITION/ CLASSIFICATION			
	Principal/Project Manager	30	100.00	3,000.00
	Senior Architect	17	100.00	1,700.00
	Licensed Surveyor	9	90.00	810.00
	Project Engineer	8	90.00	720.00
	Mech. Engineer.	8	90.00	720.00
	Sr. Structural Engineer	8	80.00	640.00
	Electrical Engineer	22	80.00	1,760.00
	Draftsperson	40	35.00	1,400.00
	Quality Control	2	100.00	200.00
	CAD Operator	42	35.00	1,470.00
SUBTOTAL		186		\$10,667.50

II-2C. Authorized Reimbursables -- Sub-consultants, Testing and Expenses

*Firm's Mark-Up Percentage: _____

PHASE	NAME OF FIRM	DESCRIPTION OF SERVICES PROVIDED	TOTAL AMOUNT* (Including mark-up)
Phase 400	Forrest T. Arrea, Landscape Architect, Howell, Michigan	Design of Stormwater Management Rain Garden	500.00
Phase 500	XYZ Productions, Inc. Lansing, Michigan	Printing and reproduction of bidding documents	500.00
Phase 500	Forrest T. Arrea, Landscape Architect, Howell, Michigan	Design of Stormwater Management Rain Garden	500.00
	SUBTOTAL		\$ 1,500.00

III-2D. Total, Summarized by Phase

PHASE	Phase 300	Phase 400	Phase 500	Phase 600	Phase 700	TOTAL
Professional Fee	1,597.50	2,820.00	3,970.00	1,120.00	1,160.00	10,667.50
Reimbursable Expenses	0.00	750.00	1,250.00	0.00	500.00	1,500.00
SUB-TOTAL	1,597.50	3,570.00	5,220.00	1,120.00	1,660.00	
TOTAL CONTRACT AMOUNT						\$ 12,167.50



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Certification of a Michigan Based Business

(Information Required Prior to Contract Award for Application
of State Preference/Reciprocity Provisions)

To qualify as a Michigan business:

Vendor must have, during the 12 months immediately preceding this bid deadline:
or

If the business is newly established, for the period the business has been in existence, it has:

(Check all that apply):

- ☐ Filed a Michigan single business tax return showing a portion, or all the income tax base allocated or apportioned to the State of Michigan pursuant to the Michigan Single Business Tax Act, 1975 PA 228, MCL • 208.1 – 208.145: or
- ☐ Filed a Michigan income tax return showing income generated in or attributed to the State of Michigan; or
- ☐ Withheld Michigan income tax from compensation paid to the bidder's owners and remitted the tax to the Department of Treasury; or

I certify that **I have personal knowledge** of such filing or withholding, that it was more than a nominal filing for the purpose of gaining the status of a Michigan business, and that it indicates a significant business presence in the state, considering the size of the business and the nature of its activities.

I authorize the Michigan Department of Treasury to verify that the business has or has not met the criteria for a Michigan business indicated above and to disclose the verifying information to the procuring agency.

Bidder shall also indicate one of the following:

- ☐ Bidder qualifies as a Michigan business (provide zip code: _____)
- ☐ Bidder does not qualify as a Michigan business (provide name of State: _____).
- ☐ Principal place of business is outside the State of Michigan, however service/commodity provided by a location within the State of Michigan (provide zip code: _____)



**DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division**

Bidder: _____

Authorized Agent Name (print or type)

Authorized Agent Signature & Date

Fraudulent Certification as a Michigan business is prohibited by MCL 18.1268 § 268. A BUSINESS THAT PURPOSELY OR WILLFULLY SUBMITS A FALSE CERTIFICATION THAT IT IS A MICHIGAN BUSINESS OR FALSELY INDICATES THE STATE IN WHICH IT HAS ITS PRINCIPAL PLACE OF BUSINESS IS GUILTY OF A FELONY, PUNISHABLE BY A FINE OF NOT LESS THAN \$25,000 and subject to debarment under MCL 18.264.



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State Facilities Administration
Design & Construction Division

Responsibility Certification

The bidder certifies to the best of its knowledge and belief that, within the past three (3) years, the bidder, an officer of the bidder, or an owner of a 25% or greater interest in the bidder:

- (a) Has not been convicted of a criminal offense incident to the application for or performance of a contract or subcontract with the State of Michigan or any of its agencies, authorities, boards, commissions, or departments.
- (b) Has not had a felony conviction in any state (including the State of Michigan).
- (c) Has not been convicted of a criminal offense which negatively reflects on the bidder's business integrity, including but not limited to, embezzlement, theft, forgery, bribery, falsification, or destruction of records, receiving stolen property, negligent misrepresentation, price-fixing, bid rigging, or a violation of state or federal anti-trust statutes.
- (d) Has not had a loss or suspension of a license or the right to do business or practice a profession, the loss or suspension of which indicates dishonesty, a lack of integrity, or a failure or refusal to perform in accordance with the ethical standards of the business or profession in question.
- (e) Has not been terminated for cause by the Owner.
- (f) Has not failed to pay any federal, state, or local taxes.
- (g) Has not failed to comply with all requirements for foreign corporations.
- (h) Has not been debarred from participation in the bid process pursuant to Section 264 of 1984 PA 431, as amended, MCL 18.1264, or debarred or suspended from consideration for award of contracts by any other State or any federal Agency.
- (i) Has not been convicted of a criminal offense or other violation of other state or federal law, as determined by a court of competent jurisdiction or an administrative proceeding, which in the opinion of DTMB indicates that the bidder is unable to perform responsibly or which reflects a lack of integrity that could negatively impact or reflect upon the State of Michigan, including but not limited to, any of the following offenses under or violations of:
 - i. The Natural Resources and Environmental Protection Act, 1994 PA 451, MCL 324.101 to 324.90106.
 - ii. A persistent and knowing violation of the Michigan Consumer Protection Act, 1976 PA 331, MCL 445.901 to 445.922.



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- iii. 1965 PA 166, MCL 408.551 to 408.558 (law relating to prevailing wages on state projects) and a finding that the bidder failed to pay the wages and/or fringe benefits due within the period required.
- iv. Repeated or flagrant violations of 1978 PA 390 MCL 408.471 to 408.490 (law relating to payment of wages and fringe benefits).
- v. A willful or persistent violation of the Michigan Occupational Health and Safety Act, 1974, PA 154, MCL 408.10001 to 408.1094, including: a criminal conviction, repeated willful violations that are final orders, repeated violations that are final orders, and failure to abate notices that are final orders.
- vi. A violation of federal or state civil rights, equal rights, or non-discrimination laws, rules, or regulations.
- vii. Been found in contempt of court by a Federal Court of Appeals for failure to correct an unfair labor practice as prohibited by Section 8 of Chapter 372 of the National Labor Relations Act, 29 U. s. C. 158 (1980 PA 278, as amended, MCL 423.321 et seq).

(j) Is NOT an Iran linked business as defined in MCL 129.312.

I understand that a false statement, misrepresentation, or concealment of material facts on this certification may be grounds for rejection of this proposal or termination of the award and may be grounds for debarment.

Bidder: _____

Authorized Agent Name (print or type)

Authorized Agent Signature & Date

☐ I am unable to certify to the above statements. My explanation is attached.



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ACKNOWLEDGMENT OF ADDENDUMS

PSC acknowledges receipt of Addenda: No. ____ dated: _____,

No. ____ dated: _____ No. ____ dated: _____



2023 Indefinite Scope Indefinite Delivery (ISID) Contract for Professional Environmental Consulting Services Scope of Work

SUMMARY

The State of Michigan is requesting the services of Professional Services Contractor(s) to provide high-quality environmental services to investigate, evaluate, design, and supervise the implementation of abatements/remedies at assigned sites of environmental contamination under Parts 201 and 213 of the Michigan Natural Resources and Environmental Protection Act (NREPA), 1994 P.A. 451, as amended; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); and other relevant federal statutes and requirements. The State intends to form a list of firms for several project types. If the professional chooses to be considered for one or more of the project types, the Professionals must be able to perform tasks required by each checked project type to bring the assigned site(s) into compliance with current state and federal environmental requirements.

For the list, preference will be given to firms, in the State of Michigan, generally meeting the following requirements.

- Experience working at Parts 201 and 213 of NREPA 1994 P.A. 451, as amended sites.
- Experience working at CERCLA regulated sites.
- Experience in conducting effective environmental assessment, RI, and FS services.
- Experience in conducting effective vapor intrusion to indoor air assessments and mitigation of vapor intrusion risks to both residential and non-residential structures.
- Experience with the development of human health and ecological risk assessments.
- Experience with database development and management.
- Ability to perform sampling and provide technical review and Quality Assurance/Quality Control (QA/QC) of provided laboratory data.
- Ability to provide comprehensive professional services for the assigned projects.
- Accounting systems with capability to provide detailed cost documentation.

- Consideration will be given to the number and location of the satellite offices, record of past performance, and financial and technical resources.
- Expertise with the selected project type(s).

A number of contaminated sites have been identified in Michigan. This includes sites appearing on the list of contaminated sites authorized by Part 213 and Part 201 of the NREPA 1994 PA 451, as amended. Major steps in resolving the contamination problems at these sites are environmental assessment/investigation and abatement. The State, through review and evaluation of the responses to this RFP, anticipates selecting one or more Professionals to place on a list to provide environmental services on small, urgent, and simple projects. The professional will be required to provide professional environmental services, technical staff, and support personnel for the ISID minor projects on an as- needed basis for various State/Client Agencies within the State of Michigan.

The executed contract will be for professional environmental services for an unspecified number of ISID projects. The scope of work for each assigned project will be defined at the time the project is awarded by the State to the Professional. The professional environmental services required for each of these assigned projects requested by the Department may include any or all the Tasks included in the Phase 100 – Study through the Phase 900 – Operation and Maintenance Management as detailed in the attached SAMPLE contract.

SCOPE OF WORK

The typical environmental services to be performed at these sites under these ISID contracts may include but not be limited to:

1. Asbestos / Lead / Mold / Biohazard / Free Product / Regulated Waste Survey / Abatement
2. Brownfield Development
3. Ecological Risk Assessment / Forestry and Land Management / Wetland Mitigation / Streams and Lakes Restoration
4. Environmental Investigation / Characterization / Pilot Tests / Feasibility Study
5. Environmental/ Roto Sonic Drilling / Well Abandonment
6. Ground Penetrating Radar (GPR) / Laser-Induced Fluorescence (LIF) Field Screening
7. Landfill Maintenance / Monitoring
8. Nuclear Waste Management / Disposal / Remediation
9. Per- & Polyfluoroalkyl Substances (PFAS) Sampling / Mitigation / Remediation
10. Phase I / Phase II / Baseline Environmental Assessments
11. Remediation Systems Design / Construction Oversight / O&M / Decommissioning
12. Specialty Sub-Surface / Utility Inspection / Sewer Camera / Cleaning

13. Underground / Aboveground Storage Tank (UST/AST) Removal / Demolition / Soil Excavation / Closure
14. Vapor Intrusion Assessments / Risk Mitigation / Design / Installation / O&M Services

While performing this work, the consultant may be required to develop site specific project work plans, health, and safety plans (HASPs), quality assurance/quality control plans, bid specifications, and community relations plans.

In addition to these activities, the State may request the Professional to perform the following additional tasks, including but not limited to: assisting the State in acquiring site access; professional assistance for assessing potential uncontrolled hazardous material sites; obtain any permits which are required for the performance of the work; conduct work in a timely manner; ensure security of the site and equipment; comply with the State Environmental Policy Act and local, State and Federal permit requirements prior to conducting remedial actions; provide enforcement support, such as documentation of facts and information about a site and expert testimony during enforcement proceedings; and provide other program development and management assistance for the State departments/agencies. This assistance may include review of plans, drawings, specifications, proposals, technical reports, and other work products associated with a hazardous substance/contaminated site where a release has occurred or is likely to occur; the assessment of environmental and public health risks; record searches; historical reviews; research on technical issues; and personnel training.

ASSIGNMENTS

Services will be requested for an assigned project and will be in accordance with a cost proposal submitted and approved at that time. The professional is expected to have the costs of all required activities needed to complete the assignment.

Individual project assignments will be based on a written Statement of Objectives provided by the State and a proposal from the Professional to perform the scope of work. It is anticipated the assigned work will be completed before the expiration date of the Contract. However, assignments made during the period of the Contract may include work that will continue after the end date of the Contract period. If the State determines there is an imminent endangerment of human health or the environment, design of an emergency abatement system may be assigned under the Contract.

DISPOSAL OF WASTE

Any wastes generated during the performance of work under this Contract must be disposed of in conformance with all applicable state and federal laws, rules, and/or regulations. For all wastes being disposed under this Contract, it is the responsibility of the Professional to ensure compliance with this directive.

The Professional shall sign waste manifests on behalf of the State attesting to the accuracy and completeness of the manifest, when requested, at sites for which they are performing oversight. The State will retain generator status for these wastes. If necessary, the State will provide a letter to the Professional conveying this authority.

The Professional shall properly dispose of any samples they retain during site work upon written permission from the Agency Project Manager. Disposal of samples is not a billable expense but may be included in the Professional's overhead.

ENVIRONMENTAL DRILLING

The Professional shall competitively bid environmental drilling work to at least three (3) drilling contractors for each drilling assignment unless the Professional can demonstrate to the Agency Project Manager's satisfaction that there is only one qualified firm who can adequately perform the work as specified. If the Professional determines the services of a specific drilling firm are required, the Professional must state those reasons in writing to the Agency Project Manager for concurrence. The written request will address cost effectiveness, time constraints, geologic situations, and drilling methodologies.

The format and process used for bidding will be in accordance with industry standards and based upon a method chosen by the Professional that is most advantageous to the State. The frequency of bidding necessary within one project assignment will be decided upon between the Professional and the Agency Project Manager. Copies of all bid documents will be provided to the Agency Project Manager. Costs incurred by the subcontractor for environmental drilling shall be billed to the State as a reimbursement.

Ineligible Costs - The Professional cannot bill the State for the drilling subcontractor's time to develop work plans, prepare bid specifications for work plans, or to attend site safety meetings.

Billing Rates - If a drilling subcontractor provides other technical services such as geophysical testing, then the Professional must submit billing rates, fees, resumes, wages, and salary ranges for that Subcontractor.

Downtime for Equipment and Supplies - The Agency Project Manager has the option to purchase supplies and equipment. If the State purchases equipment for use at a site, the State is responsible for that equipment and may need to compensate the Professional for downtime or demobilization costs if the equipment does not function properly. If the Professional furnishes supplies and equipment that do not function properly and causes downtime, the State will not compensate the Professional for the downtime. Also, the State will not reimburse the Professional for backup supplies and equipment. The State will only reimburse the Professional for supplies and equipment used at the site or that must be available as indicated specifically by the health and safety or work plan.

LABORATORIES

The Professional may be required to obtain samples, prepare them for shipping, ship, and pick up samples or any other activity associated with sample collection and interpretation as determined necessary by the Agency Project Manager.

All laboratory analyses shall be performed by the EGLE lab, unless the Agency Project Manager approves use of a current ISID Environmental Laboratory contract holder, an EPA - CLP lab, or another lab as deemed necessary by the State. If a private lab, other than an ISID State Contract Lab, is to be used to perform the analyses, prior written permission by the Agency Project Manager is required.

The private lab must report data in a format consistent with the format used by the State and must include the same level of detail regarding QA/QC documentation and chain of custody records.

EQUIPMENT AND SUPPLY PURCHASES AND RENTAL PROCEDURES

Certain Agency procedures may apply to equipment, supplies, surveys, and other items as specified by the Project Director/Agency Project Manager and will be treated as reimbursements or Other Direct Costs (ODCs). Computers and computer related materials may be included as part of such procedures; however, prior written approval from the Department regarding computers and software must be secured.

If an item will be consumed or would be expected to be rendered unusable during the project assignment, then renting is not a viable alternative and purchasing the item is necessary. Examples of consumption are bags of cement and installed casing. Examples of items expected to be rendered unusable are tyveks and disposable bailers. If the rental price or price of using the Professional's equipment exceeds the purchase price the item shall be purchased.

If renting is an option, the cost shall be based upon the expected time of usage of that service or equipment or supply. The rental charge or charge for the Professional's equipment shall include maintenance, calibration, parts replacement, and service charges for the equipment. A table recording the costs incurred to date to rent equipment, or to use the Professional's equipment, shall be included in each monthly progress report. This table shall also include the purchase price for each piece of equipment. Each item required for the project shall be listed separately.

At the end of the project, the State has the OPTION to accept ownership of a purchased piece of equipment.

If an assignment must be modified to provide for additional scope of work, the cost effectiveness of purchasing, renting, or using the Professional's equipment must be determined for the additional work.

All deposit charges will be paid by the Professional and will not be reimbursed by the State.

HEALTH AND SAFETY PLANS (HASP)

The nature of the work to be performed under this Contract is hazardous.

In addition to Health and Safety Plan requirements noted in the Phase/Task section of the Contract the following will also apply:

The Professional shall satisfy **29 CFR 1910.120** and Section 24 of Act 154 PA 1974 as amended and corresponding rules and all federal, state, and local statutes, regulations, ordinances, etc., regarding health and safety (**40 CFR 35.6055(b)**).

Prior to executing any work at the assigned site, the Professional shall develop and submit all HASPs for the site to the Agency Project Manager for review, acceptance, and inclusion into the work plan.

The Professional shall arrange for all its employees that will be working on a contaminated site to attend a health and safety training course, and/or a personnel protection course. The Professional is responsible for all costs related to the training. When requested by the State, the Professional must provide proof of completion of health and safety training for each employee working on a site prior to the employee entering the site for any purpose.

The Professional will ensure that employees and sub-consultant's/subcontractor's employees wear protective clothing and use equipment specified in the site Health and Safety Plan at all times the employee is on the site.

Health and Safety Training and Medical Monitoring are not considered reimbursable items under this Contract. When working in any level of safety equipment, the level itself does not dictate additional costs, but the equipment costs above Level D are reimbursable.

INVOICING AND PAYMENT PROCEDURES

Documentation for payment will be submitted monthly per the requirements in the Contract. Project costs will be reimbursed to the Professional on an as-incurred basis in accordance with the terms of the Contract for Professional Services. Invoices received covering service periods for which the progress reports have not been received by the State will not be processed until the progress reports are received. These will be considered incomplete invoices.

Each invoice that includes labor will include a one-page summary sheet that lists by date the name of the individual providing the professional service, the individual's position/classification, hours worked that day, and hourly billing charge. Each invoice that includes reimbursable expenses will include a one-page summary with the following categories: *Meals, Lodging, Travel, Shipping, Equipment Rental, Field Supplies/Equipment Purchase, sub-consultants, and Miscellaneous*. Under Meals and Lodging categories, the date, name of the individual and total daily cost will be included. Under Travel category, the Professional will include the date, name of the individual, total mileage (above the allowed amount specified in the Contract), mileage rate, and total daily cost. Under Shipping, the Professional will include the date shipped, description of item shipped (e.g., tech memo, etc.) and the cost to ship the item. Under Equipment Rental, the Professional will include the range of dates equipment rented, description of equipment rented and rental cost. Under Field Supplies/Equipment Purchase and Miscellaneous categories, the Professional will include the date purchased, description and purpose of the item purchased and the cost. Under sub-consultants/subcontractors, the Professional will list the date of the sub-consultant/subcontractor work, name of the sub-consultant/subcontractor, description of work conducted, and the cost. The cost for each category will be totaled.

Contract Close-Out – Final payment shall be withheld until all deliverables have been received and accepted by the State. In addition, the Professional will be required to submit to the Agency Project Manager, an unconditional waiver, signed by an authorized representative of each sub-consulting/subcontracting firm, used on the project, indicating that they have been paid in-full by the Professional for all work performed.

LITIGATION SUPPORT

The Professional's personnel and the personnel of its sub-consultants/subcontractors will be required, if requested by the Agency Project Manager on behalf of EGLE's attorneys, to provide assistance to the State in the form of participation in legal actions against alleged responsible parties for violation of state and/or federal environmental law or the recovery of public expenditures regarding any of the operations the Professional or its sub-consultants/subcontractors are involved in under this Contract. This assistance may include, but is not limited, to the preparation of reports and assisting state and/or federal attorneys in preparation of the government's case, including the preparation and execution of interrogatories, affidavits, and testimony as a fact witness.

The State will reimburse the Professional for such assistance as described above at the contractually approved rates for the Professional's personnel at the time services are required. The Professional shall insert an identical obligation to provide such assistance in all sub-consultants/subcontractor agreements to perform work under this Contract. Failure to meet the requirement of this section shall be considered a breach of this Contract.

In addition, the Professional agrees that upon the Agency Project Manager request on behalf of the State attorney, that the Professional's personnel or the personnel of its sub-consultants/subcontractor will appear at trial as an expert witness. If expert testimony is requested, the Professional and State mutually agree while the State cannot, due to Section 2164 of the Revised Judicature Act, guarantee to pay the Professional's personnel any sum in excess of the current per day expert witness fee, the State attorney may ask the court to permit the State to pay the Professional's personnel for the appearance as an expert witness on behalf of the State, at a rate equal to the rate of the employee's contractually approved rates at the time services are required, for the actual time of court appearance plus travel time and standard expenses as defined in the Contract. To the extent that the court grants such a request, the Professional agrees to reimbursement at such rates.

1. If the Professional receives a subpoena or if an Assistant Attorney General assigned to the site requests information regarding one of the Professional's assignments, the Professional may release that information without the Agency Project Manager's prior written permission. However, the Professional must provide, in writing, to the Agency Project Manager a letter documenting what information has been released, to whom and when. Any other requests to release information continue to require the Agency Project Manager prior written permission. The party requesting the information has an obligation to pay for any copying costs. If the State requests duplicate copies, the State will reimburse the Professional for copying costs.
2. If a party other than the State requests the Professional provide testimony regarding an assignment for which they have performed work under this Contract, either through deposition or testimony in court, the State will NOT reimburse the Professional for that testimony. Depositions or testimony requested by parties other than the State are not covered by this Contract, and payment for a deposition or testimony may be prohibited by MCL 600.2164.

3. If a State Assistant Attorney General requests the Professional assist in preparation for litigation, i.e., answering interrogatories, preparing for trial via interviews, and discussions concerning the site, this time is reimbursable under this Contract.

PROJECT CONTROL REPORTS AND DELIVERABLES

1. Deliverables

The Professional shall provide electronic copies of all final reports, plans, specifications, drawings, and other significant deliverables in Microsoft Word, Excel, AutoCAD, and ArcGIS as applicable, as well as in separate PDF format, provided on one (1) portable media device. Reports that require submittal into RIDE shall be submitted by the Professional as applicable. In addition, the Professional shall provide one unbound, reproducible copy of each deliverable for each of the assigned projects or as specified in the assigned project scope of work. The Department/Agency will be responsible for obtaining access to the assigned sites, providing a map for the assigned sites, and where applicable, previous investigation/analytical results for work conducted at the assigned sites.

2. Project Control

- A. The Professional will carry out the assignments under this Contract under the direction of the Project Director and/or the Agency Project Manager.
- B. The Professional will submit brief written monthly (or any other interval deemed necessary by the State) progress reports that outline: the work accomplished during the reporting period including basis for significant decisions; work to be accomplished during the subsequent reporting period; daily field activity logs; problems, encountered or anticipated; notification of any significant deviation from the approved work plans; and budget/expenditure information including: project budget, cumulative expenses, projected expenses, and explanations of budget deviations for each major task. Staff time and costs to correct errors, omissions, and deficiencies in the work are not reimbursable. The Agency Project Manager may adjust the frequency of reports depending upon the nature of the project or phase of a particular project.

3. Reports

All project reports required as deliverables to this Contract will begin with an Executive Summary.

This will briefly outline the conditions encountered at the site, work performed at the site, conclusions drawn from this work, a list of the recommended alternatives for site remediation (where applicable), and a short description of any specifications prescribed by the report. The Executive Summary will be a synopsis of all information presented in the report and organized in logical manner to present an overview of the specific report. Each assignment will require specific reporting requirements.

The following are examples of reports that may be required from the Professional:

- A. Monthly progress reports.
- B. Draft and Final Preliminary Site Investigation Work Plans and assessment reports
- C. Draft and Final FS/RI Work Plans and reports
- D. RI technical memoranda for groundwater sampling, surface water sampling, soil/sediment sampling, air quality sampling, and site hazards assessment. The technical memoranda should summarize the data and collection techniques and include an evaluation of the data.
- E. Daily field logs which include equipment and supply charges and personnel on site. These shall be maintained and attached to the corresponding monthly-progress reports.

The following tasks may be required to produce reports/work products listed above:

- Community Relations
- FS (including Risk Assessment)
- Natural Resource Damage Assessment (NRDA)
- UST removal/closure and other Related Work
- Potentially Responsible Party (PRP) Identification
- Preliminary Site Investigation
- Risk-Based-Corrective-Action Activities
- RI and recommendations
- Baseline Environmental Assessments Review
- Contract Transition Tasks

All draft documents and communications with the State regarding guidance, input, acceptance, and approval shall be marked "DRAFT" and "Deliberative Process – FOIA Exempt". Information so designated shall not be provided in response to a Freedom of Information Act (FOIA) request.

4. The Professional and/or its sub-consultants/subcontractors shall follow the current edition of ASTM Standard D 5299-92 (Standard Guide for Decommissioning Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities) and other guidance as provided by the State as a performance standard for monitoring well, soil boring, and vadose zone monitoring device abandonment.

SELECTION CRITERIA

Responses to this RFP will be evaluated based upon the technical merit, conciseness, clarity, creativity, thoroughness of the proposal, understanding of the assignments and contract requirements. Also, evaluations of qualifications and experience will be conducted for each of the project types checked in the proposal.

Depending on available funding for cleanup activities, the State anticipates awarding contracts to one or more professionals meeting the requirements of the RFP and receiving the highest scores in the evaluation. The State reserves the right not to award the contract(s) or award contract(s) to one or more firms for the submitted proposals. The State may reject proposals in whole or in part and may waive any informality or technical defects if, in the judgment of the selection committee, the best interest of the State will be served.



**Department of Technology, Management and Budget
2023 Indefinite-Scope Indefinite-Delivery – Request for Qualifications
Professional Environmental Consulting Services Questionnaire
Various Locations, Michigan**

INSTRUCTIONS: Firms shall complete the following information in the form provided. A separate sheet may be used if additional space is needed; please key the continuation paragraphs to the questionnaire. Answer questions completely and concisely to streamline the review process. If you provide information in this questionnaire that is relevant to any other parts of the proposal, please reference the article numbers to avoid repetition.

ARTICLE 1: BUSINESS ORGANIZATION

1. Full Name: [Click or tap here to enter text.](#)

Address: [Click or tap here to enter text.](#)

Telephone and Fax: [Click or tap here to enter text.](#)

Website: [Click or tap here to enter text.](#) E-Mail: [Click or tap here to enter text.](#)

SIGMA Vendor ID: [Click or tap here to enter text.](#)

If applicable, state the branch office(s), partnering organization or other subordinate element(s) that will perform, or assist in performing, the work: [Click or tap here to enter text.](#)

If awarded a contract and / or subsequent assignment(s), state the specific SIGMA business address which you would like associated for all communication (Contracts, Contract Order, Contract Modifications and Payments)? [Click or tap here to enter text.](#)

Please list all person(s) authorized to receive and sign a resulting contract and / or subsequent assignment(s). Please include persons name, title, address, email and phone number. [Click or tap here to enter text.](#)

2. Check the appropriate status:

☐ Individual firm ☐ Association ☐ Partnership ☐ Corporation, or ☐ Combination –

Explain: [Click or tap here to enter text.](#)

If you operate as a corporation, include the state in which you are incorporated and the date of incorporation: [Click or tap here to enter text.](#)

Include a brief history of the Professional's firm: [Click or tap here to enter text.](#)

3. Provide an organization chart depicting key personnel and their roles for a typical assigned project. Include generic supporting staff positions.

4. Has there been a recent change in organizational structure (e.g., management team) or control (e.g. merger or acquisition) of your company? If the answer is yes: (a) explain why the change occurred and (b) how this change affected your company. [Click or tap here to enter text.](#)
5. Provide a four year rate schedule per position.

ARTICLE 2: PROJECT TYPES AND SERVICES OFFERED

Identify the project types and professional services for which your firm is exceptionally qualified and experienced. Contractor should have the capability to form potential teams with adequate experience in environmental investigation and remediation services. Provide attachments illustrating a minimum of three examples, with references, of successful projects performed in the last five years for each item checked. Identification of specialties will assist the State project directors/managers in matching firms with projects.

- ☐ Asbestos / Lead / Mold / Biohazard / Free Product / Regulated Waste Survey / Abatement
- ☐ Brownfield Development
- ☐ Ecological Risk Assessment / Forestry and Land Management / Wetland Mitigation / Streams and Lakes Restoration
- ☐ Environmental Investigation / Characterization / Pilot Tests / Feasibility Study
- ☐ Environmental/ Roto Sonic Drilling / Well Abandonment
- ☐ Ground Penetrating Radar (GPR) / Laser-Induced Fluorescence (LIF) Field Screening
- ☐ Landfill Maintenance / Monitoring
- ☐ Nuclear Waste Management / Disposal / Remediation
- ☐ Per-& Polyfluoroalkyl Substances (PFAS) Sampling / Mitigation / Remediation
- ☐ Phase I / Phase II / Baseline Environmental Assessments
- ☐ Remediation Systems Design / Construction Oversight / O&M / Decommissioning
- ☐ Specialty Sub-Surface / Utility Inspection / Sewer Camera / Cleaning
- ☐ Underground / Aboveground Storage Tank (UST/AST) Removal / Demolition / Soil Excavation / Closure
- ☐ Vapor Intrusion Assessments / Risk Mitigation / Design / Installation / O&M Services

ARTICLE 3: PROJECT LOCATION

Identify the regions where your firm can most efficiently provide services. Assignments may vary from the regions checked, depending on the specialties and services required.

- ☐ Western Upper Peninsula (west of Marquette)
- ☐ Eastern Upper Peninsula (east of Marquette)
- ☐ Northern Lower Peninsula (north of Grayling)
- ☐ Saginaw Bay area (east of 127, north of I-69 and M 57, south of Grayling)
- ☐ Western Lower Peninsula (west of 127, north of Muskegon, south of Grayling)
- ☐ Central Lower Peninsula (east of Battle Creek, west of Chelsea, south of M 46 and M 57)
- ☐ Southwestern Lower Peninsula (west of Battle Creek, south of Muskegon)
- ☐ Southeastern Lower Peninsula (east of Chelsea, south of I-69)

ARTICLE 4: CONTRACT UNDERSTANDING

The following items should be addressed on the assumption that your firm is awarded an Indefinite-Scope, Indefinite-Delivery contract. (See attached sample contract).

- 4.1 Is it understood that your firm is required to respond to small projects (less than \$25,000) as well as larger projects?

Yes ☐ No ☐

- 4.2 Is it understood that there is no guarantee of any work under this contract?

Yes ☐ No ☐

- 4.3 Is it understood that your firm will be required to execute the attached standard State of Michigan contract language for professional services?

Yes ☐ No ☐

- 4.4 Is it clearly understood that professional liability insurance is required at the time of execution of the ISID contract? (See Article 5 of the attached Sample Contract.)

Yes ☐ No ☐

- 4.5 Is it understood that your firm must comply with State of Michigan law as it applies to your services?

Yes ☐ No ☐

4.6 Does your firm have prior experience working with the State of Michigan?

Yes ☐ No ☐

If yes, explain: [Click or tap here to enter text.](#)

ARTICLE 5: CAPACITY AND QUALITY

5.1 Briefly describe your firm's methods and procedures for quality control for your deliverables and services.

[Click or tap here to enter text.](#)

5.2 Has your firm been involved in claims or suits associated with professional services errors and / or omissions?

Yes ☐ No ☐

If yes, explain: [Click or tap here to enter text.](#)

5.3 Will there be a key person who is assigned to a project for its duration?

Yes ☐ No ☐

5.4 Please present your understanding of the relationship between your firm, the DTMB Design and Construction Division, and the State Agency for whom a project will be completed.

[Click or tap here to enter text.](#)

5.5 Describe your approach if a bidder proposes a substitution of a specified material during bidding.

[Click or tap here to enter text.](#)

5.6 Describe your approach if a contractor proposes a substitution of a specified material or detail with shop drawing submittals or in construction.

[Click or tap here to enter text.](#)

5.7 How will your firm provide consistent and continuous communication pertaining to project activities and project status to the State of Michigan during the progress of projects?

[Click or tap here to enter text.](#)

5.8 Does your company have an FTP or similar site for quick posting and distribution of information, drawings, field inspection reports, and other communications?

Yes ☐ No ☐

- 5.9 Describe your method of estimating construction costs and demonstrate the validity of that method.

[Click or tap here to enter text.](#)

- 5.10 Describe your approach to minimizing construction cost over-runs.

[Click or tap here to enter text.](#)

- 5.11 What percentage of the construction cost should be devoted to construction administration (office and field)?

[Click or tap here to enter text.](#) %

- 5.12 What portion of the assigned work will be performed with your staff and what portion will be provided by sub-consultants?

[Click or tap here to enter text.](#) %

- 5.13 On a typical project, what would be your response time, from the time receive a project assignment to starting investigation and design work? A typical project might be one involving several disciplines and in the neighborhood of a \$25,000 fee.)

[Click or tap here to enter text.](#) Days/Weeks

- 5.14 How do you assess whether a construction bidder is responsive and responsible?

[Click or tap here to enter text.](#)

- 5.15 Describe your experience with similar ISID contracts.

[Click or tap here to enter text.](#)

- 5.16 Describe your approach to a construction contractor's request for additional compensation for a change in the project scope.

[Click or tap here to enter text.](#)

- 5.17 Is a sample of field activity logs detailing a 1-week period (from one of the three (3) prior experience sites) and a weekly report provided?

☐Yes

☐No

ARTICLE 6: PERSONNEL STAFFING

- 6.1 Is an organizational chart that includes each person on your project team and their identified roles for a typical assigned project provided?

☐Yes

☐No

6.2 Please fill out the following information regarding the personnel your firm considers key to the successful completion of the study or project scope of work:

Key Personnel 1

Name: Click or tap to enter text

Job Title: Click or tap to enter text

Labor Classification: Click or tap to enter text

College Degree(s): Click or tap to enter text

Has this individual successfully completed 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up to date 8 hour HAZWOPER refresher training?

☐Yes ☐No

Key Personnel 2

Name: Click or tap to enter text

Job Title: Click or tap to enter text

Labor Classification: Click or tap to enter text

College Degree(s): Click or tap to enter text

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☐Yes ☐No

Key Personnel 3

Name: Click or tap to enter text

Job Title: Click or tap to enter text

Labor Classification: Click or tap to enter text

College Degree(s): Click or tap to enter text

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☐Yes ☐No

Key Personnel 4

Name: Click or tap to enter text

Job Title: Click or tap to enter text

Labor Classification: Click or tap to enter text

College Degree(s): Click or tap to enter text

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☐Yes ☐No

Key Personnel 5

Name: Click or tap to enter text

Job Title: Click or tap to enter text

Labor Classification: Click or tap to enter text

College Degree(s): Click or tap to enter text

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☐Yes ☐No

6.3 Does the Professional Project Manager (PM) have at least three years' experience as a PM? ☐Yes ☐No

6.4 Does the Professional PM have a minimum of 10 years' experience with similar projects? ☐Yes ☐No

6.5 Are the resumes for the key personnel provided? ☐Yes ☐No

ARTICLE 7: SPECIAL FACTORS

Include a brief description of your firm's special qualifications such as awards, recognitions, innovations, etc. that would pertain to this RFP. (As examples: any awards or recognition received by the firm or individuals for similar work, special approaches or concepts developed by the firm appropriate to this project, financial capacity, etc. Respondents may say anything they wish in support of their qualifications). Click or tap here to enter text.

ARTICLE 8: EXPERIENCE

8.1 Provide a client reference and brief descriptions of **at least three (3) projects in the last five years closely related to each of the project types** and professional services requested in this RFP. Emphasis shall be placed on recent work at sites of environmental contamination:

Project 1 Reference Information

Project Name: Click or tap to enter text

Project Address: Click or tap to enter text

Key Personnel: Click or tap to enter text

Project City / State / Zip: Click or tap to enter text

Contact Name / Phone Number / Email Address: Click or tap to enter text

Project Description: Click or tap to enter text

Project 2 Reference Information

Project Name: Click or tap to enter text

Project Address: Click or tap to enter text

Key Personnel: Click or tap to enter text

Project City / State / Zip: Click or tap to enter text

Contact Name / Phone Number / Email Address: Click or tap to enter text

Project Description: Click or tap to enter text

Project 3 Reference Information

Project Name: Click or tap to enter text

Project Address: Click or tap to enter text

Key Personnel: Click or tap to enter text

Project City / State / Zip: Click or tap to enter text

Contact Name / Phone Number / Email Address: Click or tap to enter text

Project Description: Click or tap to enter text

GUIDELINES FOR POSITION CLASSIFICATIONS

The Professionals are required to use the following guidelines as the basis for classification of personnel to be assigned under their contracts. Changes in the key personnel under the contract must be done by Contract Modification. In addition, the Professionals must provide with their modification requests the names, hourly billing rates, and resumes for the new **Key Personnel** to be added to the contracts. A Key Personnel is any staff member of the Professional who is essential for the successful completion of the Project scope of work and authorized to make decisions affecting the work at the sites under the contracts.

1. PROFESSIONAL KEY PERSONNEL

- A. **Level 4** (P4) - Plans, conducts, and supervises projects of major significance, necessitating proven managerial skills and knowledge of hazardous waste sites. Must demonstrate ability to originate and apply new and/or unique methods and procedures. Supplies technical advice and council to other professionals. Generally, operates with wide latitude for independent action.

Typical Title:

National Manager, Project Leader, Chief Engineer, or Scientist.

Qualifications and Experience:

Ph.D. degree with 10 years or more experience.

MS degree with 12 years or more experience.

BS degree with 14 years or more experience.

Experience Factors:

Technical experience in discipline directly related to the requirements of this contract. Minimum of 4 years' experience in supervising multidisciplinary professionals and general office management including budgetary requirements.

- B. **Level 3** (P3) - Under general supervision of P4 Manager, plans, conducts and supervises assignments on a project- by-project basis. Estimates and schedules work to meet completion dates. Directs assistance, reviews progress and evaluates results; makes changes in methods, design or equipment are made where necessary. Responsible for safe and cost-effective approaches to achieve the objectives of the project.

Typical Title:

Regional Team Leader, Project Engineer.

Qualifications and Experience:

Ph.D. degree with 4 to 10 years' experience

MS degree with 6 to 12 years' experience

BS degree with 8 to 14 years' experience

Experience Factors:

Technical experience in disciplines directly related to the requirements of this contract. Minimum of 4 years' experience or equivalent. Must have demonstrated ability to manage group of interdisciplinary professionals.

2. PROFESSIONAL NON-KEY PERSONNEL

- A. **Level 2** (P2) - Under supervision of a senior or project leader, carries out assignments associated with projects. Work assignments are varied and require some originality and ingenuity. Applies training of professional discipline to assigned projects and translates technical guidance and training received into usable data products and reports. Evaluates data associated with various watersheds for use in developing digital flood insurance map production and development of updated flood data.

Typical Title:

Surveyor, Engineer, Construction Manager, Project Manager, Scientist, Analyst

Qualifications and Experience:

MS degree with 2 to 6 years' experience.

BS degree with 3 to 8 years' experience.

Experience Factors:

Minimum of 2 years in area directly related to contract requirements.

- B. **Level 1** (P1) - Entry level for professional classification; works under supervision of team or project leader. Gathers and correlates basic data and performs routine tasks and other duties as assigned. Makes recommendations on work assignments and on variables which affect field operations. Assists field operations as directed, including manual tasks of equipment setup and maintenance. Performs other duties as assigned.

Typical title:

Junior Associate (Surveyor, Engineer, Scientist, Geologist, etc.)

Qualifications and Experience:

MS degree with 0 to 2 years' experience.

BS degree with 0 to 3 years' experience.

Experience Factor: None

3. TECHNICIAN NON-KEY PERSONNEL

- A. **Level 3** (T3) - Performs non-routine and complex assignments. Works under general supervision of a surveyor, scientist or engineer. Performs experiments or tests which may require non-standard procedures and complex instrumentation. Records, computes and analyzes test data, prepares test reports. May supervise lower level technicians or trades personnel.

Typical Title:

Senior Technician

Qualifications and Experience:

6 years or more experience.

Experience Factor:

Related to scope of contract.

- B. **Level 2** (T2) - Performs non-routine and complex tasks in addition to routine assignments. Works at the direction of the team or project leader. Gathers and correlates basic data and performs routine analyses. May also perform experiments or tests which may require non-standard procedures and complex instrumentation. May construct components or sub-assemblies or prototype models. May troubleshoot malfunctioning equipment and make simple repairs as authorized by team or project leader.

Typical Title:

Senior Technician

Qualifications and Experience:

Two to six years' experience or equivalent

Experience Factor:

Related to scope of contract.

- C. **Level 1** (T1) - Entry level; performs simple, routine tasks under supervision as established in chain-of- command procedures. Performs routine maintenance and may install, set up or operate field equipment of moderate complexity. Provides a wide variety of support functions during field operations.

Typical Title:

Junior Technician (field technician)

Qualifications and Experience:

0 to 2 years' experience.

Experience Factor:

None

4. TECHNICAL SUPPORT (TS) NON-KEY PERSONNEL

Performs project specific technical support work such as spreadsheet preparation, data entry, etc.

Typical Title:

Project Assistant, Data Entry Clerk, etc.

Qualifications and Experience:

0 to 2 years or more

POSITION, CLASSIFICATION AND EMPLOYEE BILLING RATE INFORMATION

PROFESSIONAL SERVICES - 2023 ENVIRONMENTAL ISID

Firm Name _____

Yearly Percentage Billing Rate Increase _____

LEVEL	CLASSIFICATION	Year 2023	Year 2024	Year 2025	Year 2026	Year 2027

*Billing Rate will be in accordance with the attached guideline page for instructions regarding the "Overhead Items used for Professional Billing Rate Calculation," and the attached "Sample Standard Contract for Professional Services," Article II, Compensation.

** Key Project Personnel



COST OR PRICE SUMMARY

(see accompanying instructions before completing this form)

Form approved
OMB No. 2030-0011
Approval expires 10-31-86

PART I - GENERAL

1. RECIPIENT		2. ASSISTANCE IDENTIFICATION NO.	
3. NAME CONTRACTOR OR SUBCONTRACTOR		4. DATE OF PROPOSAL	
5. ADDRESS OF CONTRACTOR OR SUBCONTRACTOR (Include ZIP Code)		6. TYPE OF SERVICE TO BE FURNISHED	
TELEPHONE NUMBER(Include Area Code)			

PART II - COST SUMMARY

7. DIRECT LABOR (specify labor categories)	ESTIMATED HOURS	HOURLY RATE	ESTIMATED COST	TOTALS
		\$	\$	
DIRECT LABOR TOTAL:				\$
8. INDIRECT COSTS (Specify indirect cost pool)	RATE	x BASE =	ESTIMATED COST	
		\$	\$	
INDIRECT COSTS TOTAL:				\$
9. OTHER DIRECT COSTS				
a. TRAVEL			ESTIMATED COST	
(1) TRANSPORTATION			\$	
(2) PER DIEM			\$	
TRAVEL SUBTOTAL:			\$	
b. EQUIPMENT, MATERIALS, SUPPLIES (Specify categories)			ESTIMATED COST	
			\$	
EQUIPMENT SUBTOTAL:				
c. SUBCONTRACTS			ESTIMATED COST	
			\$	
SUBCONTRACTS SUBTOTAL:			\$	
d. OTHER (Specify categories)			ESTIMATED COST	
			\$	
OTHER SUBTOTAL:			\$	
e. OTHER DIRECT COSTS TOTAL:				
			\$	
10. TOTAL ESTIMATED COST				\$
11. PROFIT				\$
12. TOTAL PRICE				\$

PART III - PRICE SUMMARY

13. COMPETITOR'S CATALOG LISTINGS, IN-HOUSE ESTIMATES, PRIOR QUOTES (Indicate basis for price comparison)	MARKET PRICE(S)	PROPOSED PRICE
		\$

PART IV - CERTIFICATIONS

14 CONTRACTOR		
14a. HAS A FEDERAL AGENCY OR FEDERALLY CERTIFIED STATE OR LOCAL AGENCY PERFORMED ANY REVIEW OF YOUR ACCOUNTS OR RECORDS IN CONNECTION WITH ANY OTHER FEDERAL ASSISTANCE AGREEMENT OR CONTRACT WITHIN THE PAST 12 MONTHS? <input type="checkbox"/> YES <input type="checkbox"/> NO (If "Yes" give name, address, and telephone number of reviewing office)		
14b. THIS SUMMARY CONFORMS WITH THE FOLLOWING COST PRINCIPLES		
14c. This proposal is submitted for use in connection with and in response to: (1)		
This is to certify to the best of my knowledge and belief that the cost and pricing data summarized herein are complete, current, and accurate as of:		(2) DATE
I further certify that a financial management capability exists to fully accurately account for the financial transactions under this project. I further certify that I understand that the subagreement price may be subject to downward renegotiation and/or recoupment where the above cost and pricing data have been determined, as a result of audit, not to have been complete, current, and accurate as of the date above.		
(3) TITLE OF PROPOSER	SIGNATURE OF REVIEWER	DATE OF EXECUTION
15. RECIPIENT REVIEWER		
I certify that I have reviewed the cost/price summary set forth herein and the proposed cost/price appear acceptable for subagreement award.		
TITLE OF PROPOSER	SIGNATURE OF REVIEWER	DATE OF EXECUTION
16. EPA REVIEWER		
TITLE OF PROPOSER	SIGNATURE OF REVIEWER	DATE OF EXECUTION

PURPOSE AND APPLICABILITY

The purpose of this form is to provide a simple form for the display of cost and price data. 40 CFR 33.290 requires the recipient to perform cost or price analysis for every procurement action, including subagreement modifications. This form is not required by EPA, but may be used at the recipient's option. If the recipient currently uses a cost and price analysis form which accomplishes the same objectives as this form, the recipient may use its own form.

INSTRUCTIONS

If this form is used, CAREFULLY READ AND FOLLOW ALL INSTRUCTIONS. Many items are not self-explanatory. Attach additional sheets if necessary.

Use only the applicable portion of this form:

Part I is applicable to all subagreements.

Part II is applicable to all subagreements requiring a cost analysis pursuant to EPA procurement regulations.

Part III is applicable to all subagreements where review is based on price comparison (i.e., price analysis).

Part IV certification will be executed as required by the instructions for each block.

PART I - GENERAL

Item 1 - Enter the name of the recipient as shown on the assistance agreement.

Item 2 - Enter the assistance identification number shown on the assistance agreement (or assigned to the project, if no assistance agreement has yet been executed).

Item 3 - Enter the name of the contractor or subcontractor with whom the subagreement is proposed to be executed.

Item 4 - Enter the date of the contractor's or subcontractor's proposal to the recipient.

Item 5 - Enter the full mailing address of the contractor or subcontractor.

Item 6 - Give a brief description of the work to be performed under the proposed subagreement.

Part II - COST SUMMARY

This portion of the form is to be completed by the contractor (or his/her subcontractor) with whom a subagreement is a formally advertised, competitively bid, fixed price subagreement.

Nothing in the following discussion should be interpreted as recommending the inclusion as direct costs any items normally treated as overhead costs in the firm's accounting or estimating system. 40 CFR Part 30 identifies general cost principles applicable to subagreements under EPA assistance. Pursuant to that Part, all subagreements awarded to profit-making organizations are subject to cost principles of 48 CFR 31.2. Architect engineer and construction contracts are also subject to 48 CFR 31.105.

Item 7 - Direct Labor

Direct labor costs normally include salaries at a regular time rate. Overtime premiums should be identified separately on an attachment. Incurrence of unanticipated overtime costs requires the approval of the recipient at the time of incurrence. If significant overtime is known to be needed at the time of completion of the cost review form, the reasons therefore, labor categories, rates and hours should be identified on the attachment. Also included is the cost of partners' or principals' time when they are directly engaged in services to be rendered under the subagreement. In case the full time of any employee is not to be devoted to work to be performed under the subagreement, only the cost of actual time to be applied should be included. The compensation of a partner or principal shall be included as direct cost only for the time that she/he is expected to be engaged directly in the performance of work under the subagreement and only if it is the firm's normal practice to charge such time directly to all jobs. The rate of compensation of a partner or principal shall be commensurate with the cost of employing another qualified person to do such work, but the salary portion shall not exceed the actual salary rate of the individual concerned. Distribution of profits

shall not be included in the rate of compensation.

Enter in block 7 the categories of professional or technical personnel necessary to perform each major element of work under the subagreement scope of services. Estimate hours worked for each category and extend them by the wage rates to be paid during the actual performance of the work. Current rates, adjusted for projected increases, if any should be useful for the actual categories of labor contemplated. All projected increases should be supported by recent experience or established personnel policy. Enter in the far right column the total estimated direct labor cost.

Supporting records to be maintained by the contractor and which must be submitted or made available to the recipient or EPA upon request include:

- The method of estimating proposed hours worked.
- The computation techniques used in arriving at proposed labor rates.
- The specific documents, books or other records used as factual source material to develop proposed hours worked and labor rates.
- Detailed rate computations which were used in computing the information submitted on the form.

If in block 14a, the contractor has checked "No," a brief narrative description of the methods used in arriving at items a through d above shall be included on an attached sheet.

Item 8- Indirect Costs

Indirect cost may consist of one or more pools of expenses which are grouped on the basis of the benefits accruing to the cost objectives represented by the distribution base or bases to which they are allocated. Since accounting practices vary, the use of particular groupings is not required. Neither is the use of any particular allocation base mandatory. However, it is mandatory that the method used results in an equitable allocation of indirect costs objectives which they support.

Normally, the firm's accounting system and estimating practices will determine the method used to allocate overhead costs. The firm's established practices, if in accord with generally accepted accounting principles and PROVIDED THEY PRODUCE EQUITABLE RESULTS IN THE CIRCUMSTANCES, will generally be accepted. Proposed overhead rates should represent the firm's best estimate of the rates to be experienced during the subagreement period. They should be based upon recent experience and be adjusted for known factors which will influence experienced trends.

Common overhead groupings are overhead on direct labor and general and administrative expenses. The first groupings usually include employment taxes, fringe benefits, holidays, vacation idle time, bonuses, applicable and direct labor, etc. The second generally includes the remaining costs, which, because of their incurrence for common or joint objectives, are not readily subject to treatment as direct costs. It is expected, however, that proposal groupings will correspond with the firm's normal method for accumulating indirect costs. (Under some accounting systems, the first grouping would be included instead under item 7.) No special categorization is required, provided the results are realistic and equitable.

Direct salaries are the normal distribution base for overhead cost but in some circumstances other bases produce more equitable results. As in the case of overhead cost groupings, the method to be used will depend upon the firm's normal practices and the equity of the results produced in the circumstances.

In the case of multibranch firms, joint ventures, or affiliates, it is expected that overhead costs applicable to specific location(s) where

work is to be based on cost data from the most recent fiscal periods updated to reflect changes in volume of business or operations.

Enter in block 8 the indirect cost pools normally used by the firm for allocation of indirect costs. Enter indirect cost rate for each pool and extend each one by the rate base to which it applies to arrive at the estimated indirect costs to be incurred during the actual performance of the work. If the indirect labor total from block 7 is not used as the rate base for any of the indirect cost pools, the rate base used must be explained on an attached sheet.

A brief narrative statement outlining the firm's policies and practices for accumulating indirect costs. Enter the indirect cost rate costs and the method used to compute the proposed rate or rates shall accompany the form. Include comment on the firm's policies regarding the pricing and costing of principals' time. The normal accounting treatment of principals' salaries, the annual amounts, and the hourly charge rate, if used, should be discussed.

Enter in the far right column the total estimated indirect costs.

Supporting records to be maintained by the contractor and which must be submitted or made available to the recipient or EPA upon request include:

a. Detailed cost data showing overhead accounts, allocation bases, and rate computations for the preceding fiscal period. If more than six months of the current fiscal period have elapsed, cost data for this period should be included as one of the three period(s).

b. Company budgets, budgetary cost data and overhead rates computations for future period(s).

Item 9 - Other Direct Costs

The following items are illustrative of costs normally included in this category of costs:

a. *Travel cost, including transportation, lodging, subsistence, and incidental expenses incurred by personnel or consultants while in travel status in connection with the performance of services required by the contract. The cost principles generally require the use of less than first class air accommodations and also limit the cost of private aircraft.*

b. *Equipment, Materials, and Supplies*

(1) Long distance telephone calls, telegraph and cable expenses to be incurred in connection with the performance of services required in connection the subagreement.

(2) Reproduction costs, including blueprints, black and white prints, ozalid prints, photographs, photostats, negatives; and express charges.

(3) Commercial printing, binding, artwork, and models.

(4) Special equipment.

c. *Subcontractors*

d. *Other Direct costs, if any, not included above.*

Enter in blocks 9a-d all other direct costs proposed. Travel costs entered must be supported by an attachment which identifies the number of staff trips proposed and the estimated cost per staff trip for both local and long distance transportation. The number of days and the rate per day must be provided to support the per diem shown. Each subcontract and consultant agreement must be identified separately in block 9c.

Enter in the far right column on line 9e the total of all other direct costs (9a-d).

Supporting data to be maintained by the contractor and which must be submitted or made available to the recipient or EPA upon request include:

a. basis for other direct costs proposed.

b. factual sources of costs, rates, etc., used in computing proposed amount of each cost element.

Item 10 - Total Estimated Cost

Enter the total of all direct labor, indirect costs and other direct costs from items 7, 8, and 9.

Item 11 - Profit

A fair and reasonable provision for profit cannot be made by simply applying a certain predetermined percentage to the total estimated cost. Rather, profit will be estimated as a dollar amount after considering:

a. *degree of risk.*

b. *nature of the work to be performed.*

c. *extent of firm's investment.*

d. *subcontracting of work, and*

e. *other criteria.*

The Federal Acquisition Regulation cost principles applicable to subagreements with profit-making organizations (40 CFR 31.2 and 31.105) disallow certain types of costs which are sometimes incurred by firms in the normal conduct of their business. Examples of costs which are not allowable under these cost principles include, but are not limited to, entertainment, interest on borrowed capital, and bad debts. Because the Government considers "profit" to be the excess of price over allowable costs, such computation can indicate a higher profit estimate than the firm's experienced profit as it customarily computes it. The contractor may separately disclose to the recipient its customary computations.

Enter the dollar amount of profit in block 11.

Item 12 - Total Price

Enter the total of items 10 and 11.

Part III - PRICE SUMMARY

This portion of the form is for use by a recipient when price comparison, i.e., price analysis, is used subagreement review. It may also be used by a contractor when price comparison is used as a basis for award of a subcontract.

Item 13 - Competitor's Catalog Listings, In-House Estimates, Price Quotes

Enter sources of all competitive bids or quotes received, or catalogs used and their prices, or in-house estimates made, if appropriate, for comparison. Attach additional sheets if necessary, particularly for purchases of several different items.

Enter in the far right column the proposed price for the subagreement.

Part IV - CERTIFICATIONS

Item 14 - Contractor - FOR USE BY CONTRACTOR OR SUBCONTRACTOR ONLY.

Complete this block only if part II has been completed.

Enter the specific cost principles with which the costs summary of Part II conforms. Cost principles applicable to subagreements with various types or organizations are identified in 40 CFR Part 30.4010. Cost principles applicable to subagreements with profit-making organizations are those at 48 CFR 31.2 and, for architect-engineer or construction contracts, 48 CFR 31.105.

c. (1) **Describe** the proposal, quotation, request for price adjustment, or other submission involved, giving appropriate identifying number (e.g., RFP No. _____).

(2) **Enter** the date when the price negotiations were concluded and the contract price was agreed to. The responsibility of the subagreement is not limited by the personal knowledge of the contractor's negotiator if the time of agreement, showing that the negotiated price is not based on complete, current, and accurate data.

(3) **Enter** the date of signature. This date should be as close as practicable to the date when the price negotiations were concluded and the subagreement price was agreed to (not to exceed 30 days).

Item 15 - Recipient Reviewer - FOR USE BY RECIPIENT ONLY.

If required by applicable assistance regulations, the recipient must submit the signed form for EPA review prior to execution of the subagreement.

Item 16 - EPA Reviewer - FOR USE BY EPA ONLY.



STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

This contract authorizes the professional services contractor to provide professional services.
(Authority: 1984 PA 431)

CONTRACT FOR PROFESSIONAL ENVIRONMENTAL SERVICES:
Indefinite Scope-Indefinite Delivery

THIS CONTRACT, authorized this **DATE** day of **MONTH** the year two-thousand and twenty-three (2023), by the Director, Department of Technology, Management and Budget, BETWEEN the STATE OF MICHIGAN acting through the STATE FACILITIES ADMINISTRATION, DESIGN AND CONSTRUCTION DIVISION of the DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET, 3111 W. St. Joseph Street, Lansing, Michigan, 48917, hereinafter called the Department, and

PSC NAME
MAILING ADDRESS
CITY, STATE, ZIP

the Prime Professional Services Contractor, hereinafter called the Professional. WHEREAS, the Department proposes securing professional services for:

Indefinite-Scope, Indefinite-Delivery Contract No. 00XXX

Index No. (To Be Established)

Contract Order No. Y (To Be Assigned)

File No. (To Be Assigned)

Department of Technology, Management and Budget, State Facilities Administration, Design and Construction Division, Professional Environmental Services Indefinite-Scope, Indefinite-Delivery Contract (ISID) for Minor Projects –

2023 Environmental ISID Services

Various State Departments and Facilities

Various Site Locations, Michigan

NOW THEREFORE, the Department and the Professional in consideration of the covenants of this Contract agree as follows:

- I. The Professional shall provide primary environmental investigation/assessment/design/construction oversight services for the assigned projects to the extent authorized by the Department of Technology, Management and Budget State Facilities Administration (SFA), Design and Construction Division (DCD) [The Department] and be solely responsible for such professional services. The Professional's services shall be performed in strict accordance with the assigned Project scope of work.
- II. If authorized, the Professional shall provide environmental services for the identified project types.

Regions								Project Types and Services Offered													
Western UP	Eastern UP	Northern LP	Saginaw Bay	Western LP	Central LP	Southwestern LP	Southeastern LP	Regulated Waste Survey/Abatement	Utility Inspection/Cleaning	Nuclear Waste Mgmt./Disposal/Remediation	GPR/LIF Field Screening	Phase I/Phase II/BEA	Well Drilling/Abandonment	Env Investigation/Pilot Tests/Feasibility Study	UST & AST removal/Demolition/Excavation	Remediation Sys Design/O&M/Decommissioning	Vapor Intrusion Mitigation Design and O&M	Ecological RA/Forestry/Wetland/Streams/Lakes	Landfill Maintenance/Monitoring	Brownfield Development	Per-& Polyfluoroalkyl Substances (PFAS) Sampling
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x

NOTE: Blackened box(es) indicate a service that the committee did not select for your firm.

- III. The State of Michigan shall compensate the Professional for providing their professional services for the Project in accordance with the conditions of this Professional Services Contract.

IN WITNESS, WHEREOF, each of the parties has caused this Professional Services Contract to be executed by its duly authorized representatives on the dates shown beside their respective signatures, with the Contract to be effective upon the date on which the Professional received a copy executed by the authorized State of Michigan representative(s) by regular, registered, or certified mail or by delivery in person.

FOR THE PROFESSIONAL:

Firm Name

SIGMA Vendor ID Number

Signature

Date

Title

FOR THE STATE OF MICHIGAN:

Director, DTMB | SFA | Design and Construction

Date

WHEREAS, this Professional Services Contract constitutes the entire agreement as to the Project between the parties, any Contract Modification of this Contract and the Department's approved and attached Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for, the Professional firm's final design Contract Documents/architectural and engineering design errors, omissions or neglect on the part of the Professional.

ARTICLE I PROFESSIONAL SERVICES SCOPE OF WORK

Provide professional environmental services, technical staff, and support personnel for ISID minor projects on an as-needed basis at various State/Client Agencies within the various site location areas as defined by the State of Michigan.

This Contract is for professional environmental investigation and/or design services for an unspecified number of ISID projects ("Assignment"). The scope of work for each assigned project will be defined at the time the project is awarded by the State to the Professional firm. The professional environmental services required for each of these assigned projects requested by the Department may include any or all of the Tasks included in the Phase 100 – Study through the Phase 900 – Operation and Maintenance Management.

The Professional firm's environmental services shall be performed in strict accordance with this Professional Services Contract and be in compliance with the Department's approved and attached Appendix I– Project/Program Statement.

This Contract does not warrant or imply to the Professional environmental firm, entitlement to perform any specific percentage (%) amount of environmental work during the life of this Contract.

This Contract will remain in effect for **three (3) years** from the date of this Contract award but may be unilaterally terminated by the State of Michigan at any time, for cause or its convenience, by written notification of the State, to the Professional. Furthermore, this Contract may be extended for **one (1) additional year**, at the sole option and discretion of the State upon the Department providing written notice to the Professional prior to the expiration of the original Contract time period. Any such time extension shall be subject to the terms and conditions of this Contract, including, but not limited to, the existing hourly billing rates included in this Contract for the Professional, their Consultant, and their employees or agents.

Please note that the Professional Services Contract ISID Contract No., as noted on page 1, must be provided on all Project correspondence and documents. Also, services are not to be provided or expenses incurred until individual ISID Projects are assigned to this Contract (see the Article II – Compensation and the Appendix 1 – Project/Program Statement).

Upon award of this Contract and each subsequent assignment, the Professional understands and agrees that time is of the essence. Failure to adhere to timely completion will be grounds for the Department, at its sole discretion, to terminate or limit future work under this Contract.

The Professional shall provide all professional services, technical staff, and support personnel necessary to complete the Project as described in its Project/Program Statement, in the best interest of the State, and within the Professional's fee(s) herein authorized by the State. Assigned project services shall comprise, without exception, every professional discipline and expertise necessary to meet all the requirements as described in the Project/Program Statement and in accordance with the accepted industry standards for professional practice and services. The Professional's services include attendance at all Project related meetings and conferences. Professional services for the assigned projects under this contract shall be provided in the Phase/Task sequence shown below and shall be rendered in accordance with the Professional's proposed and approved Project Study, Design, and Proposed Construction Schedule. The Professional's study, design, and proposed construction schedule shall be detailed, undated, and time sequence related for all Phase/Task services appropriate for the Project. The Professional shall field-check and verify the accuracy of all study/drawing and any data furnished by the Department, the State/Client Agency or any other Project related source. The Professional shall not employ or consult with any firms in completing the Professional's obligations herein who it anticipates will be a construction Bidder for the Project or any part thereof, unless specifically authorized, in writing, by the Department.

The Professional acknowledges that the Department is the first interpreter of the Professional's performance under this Contract.

The Professional acknowledges by signing this Professional Services Contract having a clear understanding of the requested professional environmental services required by the Department, and further agrees that the terms and conditions of this Professional Services Contract provide adequate professional fee(s) for the Professional to provide the requested Project scope of work requirements for each assigned project. No increase in compensation to the Professional will be allowed unless there is a material change made to the scope of work of the Assignment/Program Statement and the change is accepted and approved, in writing, by the State. Professional services shall not be performed, and no Project expenses shall be incurred by the Professional prior to the issuance of a written and signed Professional Services Contract and a Contract Order authorizing the Professional to start the Project work. Compensation for Department directed changes to the Project will be provided to the Professional by a Contract Modification and/or Contract Change Order signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from changes in the Project scope of work or previously unknown on-site field conditions will be compensated to the Professional, as approved by the Project Director/Agency Project Manager, on an hourly billing rate basis in accordance with this article. This compensation shall not exceed seven and half percent (7.5%) of the Construction Contractor's quotation for the Bulletin or Contract Change Order or an amount mutually agreed upon by the Professional and the Project Director/Agency Project Manager.

The Professional shall immediately inform the Department whenever it is indicated that the Professional's authorized not-to-exceed Budget for any of the assigned Projects may be exceeded. The Professional shall make recommendations to the Department for revisions to be implemented in order to not exceed the original authorized Budget. Any revision to the Project must be accepted and approved by the Department in writing.

The professional services may also include participation in legislative presentations as described in the "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" and as the legislature or the Department may prescribe.

No substitution of any "Key Personnel/Employee" essential for the successful completion of the Project and identified in the Professional's Organizational Chart will be allowed by the Professional for this Contract without the prior written consent from the Project Director/Agency Project Manager. Before any "Key Personnel/Employee" substitution takes place, the Professional shall submit a written request to the Project Director/Agency Project Manager, and this substitution request shall include the following information: (1) A request in writing for a No Cost Contract Modification; (2) Detailed written justification for this substitution; (3) The Professional's qualifications of any proposed "Key Principal Personnel/Employee" replacement; and (4) A written statement from the Professional assuring the Department that the Project scope of work will not be adversely affected by this substitution. This request to modify their Professional Services Contract must be accepted and approved in writing by the Project Director/Agency Project Manager and the Director of the Department.

The Department will designate individuals to serve as the Project Director and Agency Project Manager for the Project scope of work who shall be fully acquainted with the Project/Program Statement and have the authority to render Project decisions and furnish information promptly. Except in connection with issues under the Article XII - Contract Claims and Disputes text, the Project Director/Agency Project Manager will exercise general management and administration for the Professional's services in so far as they affect the interest of the State. The Professional shall indemnify, defend, and hold harmless the State against exposure to claims arising from delays, negligence, or delinquencies by the Professional for the professional services of this Contract.

During the Construction Administration Services Phase of the Project, the Professional is required to complete and submit, the on-site inspection record form, "DTMB-0452, The Professional's Inspection Record," for all on-site inspection visits to the Project site. The Inspection Record shall be completed and signed by the Professional and submitted monthly, with the original document sent to the Project Director/Agency Project Manager and copies sent to the Construction Contractor. The Inspection Record shall accompany the Professional's monthly payment request.

The "DTMB-0460, Project Procedures" contains Department forms which shall be used during the Construction Administration Phase of this Contract. All professional services will be consistent with the Department's current "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" unless otherwise approved in writing by the Department.

The professional services required for each Phase of this Contract shall be performed by the Prime Professional and their Consultants in accordance with service descriptions in this article. The following service descriptions outlined in this Contract represent the Department's standard of care for the Professional's responsibilities for providing the professional services of this Contract; but by inclusion, or omission, the descriptions do not limit or exclude any regular or normal professional services necessary to accomplish the Project in accordance with the approved Project Budget and the industries accepted practice and standards for professional services. All of the services outlined in this Contract may not be applicable to the Project/Program Statement. The Professional shall determine and coordinate the interface of the services required for the Project and is responsible for identifying any additional services necessary to successfully complete the Project.

The professional shall execute the following PHASES upon written authorization from the Project Director.

PHASE 100 - ENVIRONMENTAL INVESTIGATION/STUDY SERVICES

Provide complete and comprehensive Environmental Investigation/Study Deliverables to meet the requirements of the Project/Program Statement. Upon completion of all field investigation, assessment, research, review and/or oversight, prepare a complete report with an executive summary, and in such detail, as the Project Director may prescribe. The services under this phase may include but not be limited to coordination, environmental assessments, drilling, field sampling/oversight, data/document review/management, feasibility study, and reporting as described in the Project/Program Statement. Project reports must be in accordance with Department/Client/Agency requirements and as outlined in the Project/Program Statement but shall include, as a minimum and as appropriate, the following items: (1) Problem; (2) Conclusion; (3) Recommendations; and (4) Discussion, details, and documentation.

PHASE 300—SCHEMATIC DESIGN

Prepare Schematic Design Deliverables consistent with the Project/Program Statement. The deliverables shall consist of conceptual remediation system, drawings, outline specifications, a Schematic Construction Cost Estimate, other related documentation, and shall diagrammatically depict the areas, scales, and relationships of the functions. The services under this phase may include but not be limited to coordination, construction codes and design reviews, civil/site staging investigation, schematic design and utilities review, drafting, and project cost/proposed construction schedule, as required by the Department/Client/Agency and as outlined in the Project/Program Statement. Acceptance of the Schematic Design by the Department/Client/Agency does not limit subsequent inclusion of minor, but essential, schematic or design details whose necessity and arrangement may best become apparent during subsequent Phases of the Project design. Revise design as necessary and obtain approval from the Department/Client/Agency.

PHASE 400—DESIGN DEVELOPMENT

Prepare Design Development Deliverables based on the Owner-accepted Schematic Design to depict the intent of the designed remediation system(s). The deliverables shall consist of draft drawings and specifications, Construction Cost Estimates and other related documentation to clearly establish the complete basis for further detail into final design drawings/specifications. The deliverables shall further define the Project by fixing and describing the Project size, character, site relationships, and other appropriate elements including the environmental, civil, structural, architectural, mechanical, electrical, and safety systems. The services under this phase may include but not be limited to coordination, draft drawings/specifications, site specific staging investigation, structural calculations and preliminary environmental/architectural/engineering design development/reviews of drawings/specifications, as required by the Department/Client/Agency and as outlined in the Project/Program Statement.

PHASE 500—CONSTRUCTION DOCUMENTS AND BIDDING DOCUMENTS

Prepare Construction Documents that revise, refine, amplify, and depict, in detail, the Project. The documents shall set forth, in detail, quality levels of and requirements for the construction, and shall consist of final drawings/specifications that comply with applicable regulatory and construction code requirements, enacted at the time of completion of the one hundred percent (100%) Construction Documents. Prepare Bidding Documents in Phases/Bid packages appropriate to the Project requirements and funding. Incorporate the current edition of DTMB "MICHSPEC", "DCSPEC" or "50KSPEC", as adopted and modified by the State of Michigan. The Construction Documents shall contain all information necessary to bid and construct the Project. The services under this phase may include but not be limited to coordination, final drawings/specifications and bidding documents, civil/site staging design, final structural calculations, final environmental/architectural/engineering design development/reviews of drawings/specifications, construction testing program, hazardous materials, health and safety risks, final design correction procedures, design and construction budget, construction codes/permits and construction schedule, as required by the Department/Client/Agency and as outlined in the Project/Program Statement.

PHASE 600 - CONSTRUCTION ADMINISTRATION - OFFICE SERVICES

Provide all required construction oversight administration and timely professional review and administrative services, as the circumstances of the Construction may require, allowing the successful review/implementation of the Construction Documents into a completed remedial actions/abatement measures and/or for the use intended by the Department/Client/Agency. The services under this phase may include but not be limited to coordination, review and approval of shop drawings and submittals, reporting of construction progress, construction quality testing, construction contractor performance review, punch list procedures, claims, establishing close-out procedures and developing/review of as-built documents, as required by the Department/Client/Agency requirements and as outlined in the Project/Program Statement.

PHASE 700 - CONSTRUCTION ADMINISTRATION - FIELD SERVICES

Provide all required Construction Oversight and Field Services, including timely inspection and professional services, as the circumstances of the Construction may require, allowing the successful review/implementation of the Construction Documents into a completed remedial action/abatement measures and/or for the use intended by the Department/Client/Agency. The services under this phase may include but not be limited to coordination, field inspections, progress meetings and final project inspection, as required by the Department/Client/Agency requirements and as outlined in the Project/Program Statement.

PHASE 900 – OPERATION AND MAINTENANCE SERVICES – REMEDIATION FACILITY

Provide all required Operation and Maintenance (O&M) Services and perform, in a safe and secure environment, all functions, including timely inspection, sampling and professional services, necessary to maintain uninterrupted, effective and efficient facility/system components for the use intended by the Department/Client/Agency. The services under this phase may include but not be limited to coordination, general system operation/inspections, routine system/building/ground maintenance, sampling, spare replacement parts, consumable supplies, utilities, waste materials removal/treatment/disposal, non-routine emergency services, progress meetings and reporting, as required by the Department/Client/Agency requirements and as outlined in the Project/Program Statement.

ARTICLE II COMPENSATION

In consideration of the performance of this Contract, the Department agrees to pay the Professional, as compensation for professional services, an hourly billing rate for each employee providing a direct service to this Project, on a not-to-exceed basis as specified herein, subject to subsequent modifications mutually agreeable to the parties hereto; provided, however, the Professional may not incur costs, or bill the Department, for professional services in excess of the estimates established for this Project without the prior written agreement of the Department. The attached proposal prepared by the Professional in response to the Request for Proposal, by the Owner, may describe methodology, services, schedule, and other aspects of the work to be performed under the Contract but does not supersede the Contract.

Compensation to the Professional shall be on an hourly billing rate basis for professional services rendered by salaried and non-salaried professional, technical, and technical support employees, except for any authorized reimbursable expenses provided for in this Contract. Total compensation for any Phase shall not exceed the amount authorized for that Phase, unless authorized in writing by the Department's approved Contract Change Order. Professional services shall not be performed, and no Project expense shall be incurred by the Professional firm prior to the issuance of a written and signed Professional Services Contract and a DTMB Form 0402 - Contract Order by the Department to the Professional, authorizing the Professional to start the Project.

Compensation to the Professional for services and authorized technical and technical support employees performing a direct service for this Project shall be determined using the Professional firm's billing rates. The Professional firm's hourly billing rate shall be the actual amount paid for the employee services on the Project including fringe benefits, vacations, sick leave, other indirect costs, and profit. The Professional firm's hourly billing rates shall not change during the life of this Contract without written approval by the Department. See attached Appendix, **Overhead Items Allowed for the Professional Services Contractor Firm's Hourly Billing Rate Calculation**, for the guide to overhead items allowed for the professional services contractor firm's hourly billing rate calculation. Reimbursement for the Project/Program Statement scope of work requirements will be provided only for Department approved items authorized for reimbursement compensation in this Contract. The State will not reimburse the Professional for downtime, or for personnel involved in downtime due to mechanical problems or failure of Professional's or Subcontractor equipment.

The preparation of Bulletins and Contract Change Orders resulting from changes to the Project scope of work or previously unknown on-site field conditions will be compensated to the Professional, as approved by the Department on an hourly billing rate basis in accordance with this article. This compensation shall not exceed seven and one-half percent (7.5%) of the Construction Contractor's quotation for the Bulletin or Contract Change Order or an amount mutually agreed upon by the Professional and the Project Director/Agency Project Manager.

The Professional shall provide, but no additional monetary compensation shall be allowed for the services necessary to respond to and resolve all claims arising wholly or in part from the Professional's errors and/or omissions or other aspects of the Project's design or the Professional firm's performance which is inconsistent with the Professional or Construction Contract.

- 2.1 PREMIUM TIME/OVERTIME: This Contract anticipates that no premium or overtime is required to achieve the Project's scope of work. No compensation will be allowed to the Professional for any premium or overtime cost incurred to achieve the Project schedule of this Contract, unless directed in writing by the Project Director/Agency Project Manager and approved by the Department.
- 2.2 EMPLOYEE HOURLY BILLING RATES: Hourly billing rates will include all direct and indirect monetary costs to the State for the Professional's services under this Contract other than the authorized and approved reimbursements. Hourly billing rates shall be based on the Professional's documented historical operating expenses and adjusted for Project specific costs. In no case shall this documentation period include more than eighteen (18) months prior to the date of award of this Contract.

Lump-sum payments to employees are not allowed under this Contract. Billing rates for employees who perform professional services of a subordinate or of a position classification having a lower classification/pay range shall be accounted and paid for at the lower hourly billing pay rate. The hourly billing rate charge of any employee may be changed by the Professional with a written and Department approved Contract Modification to account for normal personnel pay increases.

Hourly billing rates include, but are not limited to: Overhead items such as employee fringe benefits, vacations, sick leave, insurance, taxes, pension funds, retirement plans, meals, lodging, and all Project related travel expenses for Projects less than one-hundred (100) miles in each direction from the Professional's nearest Michigan office, computer costs/operating costs, data entry, and time, telephone, telephone- related services, and all reproduction services (except Contract Bidding Documents/Deliverables).

The hourly billing rate also includes all reproduction costs for design interpretations, study/design clarifications and Bulletins related to design errors or omissions, construction code compliance (precipitating either from design code compliance and plan review, design interpretations, or construction on-site/field inspections), and all similar, or avoidable costs.

All incidental postage, mail, or other shipping or delivery services, acquisition, bad debts, previous business losses, employment fees, depreciation, and operating costs for equipment, including computer design and/or computer drafting systems, and any specialized testing equipment are to be included. The hourly billing rate shall include, without exception, secretarial, computer/typing/word processing, editing, and clerical services utilized in any way for the Project as well as other non-technical and/or employees providing indirect services. The hourly billing rate also includes all profit without regard to its form or distribution.

Items not allowable as part of the Professional's calculated hourly billing rate include but are not limited to: Any costs associated with litigation and settlements for the Professional, other liability suits, out-of-state offices and associated travel, bonuses, profit sharing, premium/overtime costs, public relations, entertainment, business promotion, contributions, and various speculative allowances.

The hourly billing rate for the Professional may not be applied to the work of the Professional's Sub- Consultant's staff. Each Sub-Consultant firm must submit a separate hourly billing rate with proper documentation for Sub-Consultant services provided as part of the Proposal. The hourly billing rate of the respective Consultant firm shall be used for that Consultant firm's personnel only. No mark-up to Consultant firm's charges will be allowed.

- 2.3 RANGE OF EMPLOYEE HOURLY BILLING RATES: The Professional shall identify the service being provided and include the Professional's or Consultant's employee(s) full names and position classifications for the Project and their current hourly billing rates at the beginning and at the anticipated end of the Project. This hourly billing rate range shall reflect any anticipated pay increases over the life of the Contract. The range of hourly billing rates for any employee position or classification may not be changed without an approved Contract Modification.

- 2.4 **DIRECT COST REIMBURSEMENT ITEMS:** The Professional's Consultant services and authorized reimbursable expenses shall be treated as an authorized reimbursable expense item at a direct cost. The Professional shall be responsible for the selection of the supplier of the professional services or materials; the coordination, adequacy, and application of the professional services, whether provided by the Professional's staff or provided by their Consultant, and any Project costs that exceed the budget for each Phase.

Project related travel expenses (mileage, meals, lodging) for Projects more than one-hundred (100) miles in one-way from the Professional's nearest office shall be treated as an authorized reimbursable expense at the State of Michigan's current travel rates.

Unless authorized elsewhere in this Contract, direct cost reimbursement items shall be limited to the actual cost of printing and reproduction of project deliverables such as Final Study Reports, Surveys, Bidding Documents, and U. S. Mail regular shipping postage of the project deliverables listed above. In addition, direct cost reimbursement items may include soil borings, site surveys and any required laboratory testing, Design Code Compliance and Plan Review Approval Fees by the licensing agency; reproduction of documents for legislative presentation, artistic productions, mobilization of testing equipment, laboratory costs for testing samples, per-linear-foot cost of soil borings and specialized inspections of the structural, mechanical, electrical, chemical or other essential components of the Project.

Compensation for this Contract shall not exceed the budget per Project Phase identified in the attached Contract Order unless authorized by a Department approved Contract Modification. It shall be the Professional's responsibility to carefully monitor Project costs, activities, and progress and to provide the Project Director/Agency Project Manager timely notification of any justifiable need to increase the authorized budget. The Professional may not proceed with professional services that have not been authorized by the Project Director/Agency Project Manager and shall immediately notify the Project Director/Agency Project Manager if such services have been requested or have become necessary.

Professional/Sub-Consultant staff and hourly billable rates are identified in the attached Professional's proposal.

ARTICLE III PAYMENTS

Payment for the professional services shall be based on the Professional's performance of authorized professional service(s) performed prior to the date of each submitted payment request. Payment requests shall be submitted monthly to the Project Director/Agency Project Manager on a payment request form (DTMB-440). Payment for each monthly submitted payment request shall be made within thirty (30) consecutive calendar days following the Department's approval of the payment request. Payment requests shall include signed certification by the Professional of the actual percentage of work completed as of the date of invoicing for each Phase and summarize the amounts authorized, earned, previously paid, and currently due for each Project Phase.

Payment requests shall be supported by itemized records or documentation in such form and detail as the Department may require.

Each of the Professional's Consultant's submitted payment request applications shall include similar information. This includes, but is not limited to:

- Phase Numbers for the professional services provided.
- Professional's personnel and position/classification providing service and hours worked. Current hourly billing rate charges for each individual position/classification.
- Copy of certified on-site visitation log or site visit report showing time on-site.
- Itemized invoices from each of the Professional's Consultant's documenting that firm's professional services charge and the Project work related services provided.
- Authorized reimbursable expense items provided with receipts and invoices.

The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify the Professional of any dispute within a reasonable time. Payment by the State will not constitute a waiver of any rights as to the Professional's continuing obligations, including claims for deficiencies or substandard Contract Activities. The Professional's acceptance of final payment by the State constitutes a waiver of all claims by the Professional against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

The State will only disburse payments under the Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at <http://www.michigan.gov/SIGMAVSS> to receive electronic funds transfer payments. If Contractor does not register, the State is not liable for failure to provide payment. Without prejudice to any other right or remedy it may have, the State reserves the right to set off at any time any amount then due and owing to it by Contractor against any amount payable by the State to Contractor under this Contract

ARTICLE IV ACCOUNTING

The Professional shall keep current and accurate records of Project costs and expenses, hourly billing rates, authorized reimbursable expense items, and all other Project related accounting documents to support the Professional's monthly application for payment. Project records shall be kept on a generally recognized accounting basis. Such records shall be available to the Department for a period of ten (10) years after the Department's final payment to the Professional. The State of Michigan reserves the right to conduct, or have conducted, an audit and inspection of these Project records at any time during the Project or following its completion.

ARTICLE V INSURANCE

The Professional shall purchase, maintain and require such insurance that will provide protection from claims set forth below which may arise out of or result from the Professional firm's services under this Contract, whether such service is performed by the Professional or performed by any of the Professional firm's Consultant's or by anyone directly or indirectly employed by them, or by anyone for whose acts they may be liable. The following insurance policy limits described below are intended to be the minimum coverage acceptable by the State:

For the purpose of this Section, "State" includes its departments, divisions, agencies, offices, commissions, officers, employees, and agents.

- (a) The Contractor must provide proof that it has obtained the minimum levels of insurance coverage indicated or required by law, whichever is greater. The insurance must protect the State from claims that may arise out of or result from or are alleged to arise out of or result from the Contractor's or a Subcontractor's performance, including any person directly or indirectly employed by the Contractor or a Subcontractor, or any person for whose acts the Contractor or a Subcontractor may be liable.
- (b) The Contractor waives all rights against the State for the recovery of damages that are covered by the insurance policies the Contractor is required to maintain under this Section. The Contractor's failure to obtain and maintain the required insurance will not limit this waiver.
- (c) All insurance coverage provided relative to this Contract is primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State.
- (d) The State, in its sole discretion, may approve the use of a fully-funded self-insurance program in place of any specified insurance identified in this Section.
- (e) Unless the State approves, any insurer must have an A.M. Best rating of "A" or better and a financial size of VII or better, or if those ratings are not available, a comparable rating from an insurance rating agency approved by the State. All policies of insurance must be issued by companies that have been approved to do business in the State. To view the latest A.M. Best's Key Ratings Guide and the A.M. Best's Company Reports (which include the A.M. Best's Ratings) visit the A.M. Best Company internet web site at <http://www.ambest.com>.
- (f) Where specific coverage limits are listed in this Section, they represent the minimum acceptable limits. If the Contractor's policy contains higher limits, the State is entitled to coverage to the extent of the higher limits.

- (g) The Contractor must maintain all required insurance coverage throughout the term of this Contract and any extensions. However, in the case of claims-made Commercial General Liability policies, the Contractor must secure tail coverage for at least three (3) years following the termination of this Contract.
- (h) The minimum limits of coverage specified are not intended and may not be construed; to limit any liability or indemnity of the Contractor to any indemnified party or other persons.
- (i) The Contractor is responsible for the payment of all deductibles.
- (j) If the Contractor fails to pay any premium for a required insurance policy, or if any insurer cancels or significantly reduces any required insurance without the State's approval, the State may, after giving the Contractor at least 30 days' notice, pay the premium or procure similar insurance coverage from another company or companies. The State may deduct any part of the cost from any payment due the Contractor or require the Contractor to pay that cost upon demand.
- (k) In the event the State approves the representation of the State by the insurer's attorney, the attorney may be required to be designated as a Special Assistant Attorney General by the Michigan Attorney General.

The Professional firm's Errors and Omissions coverage shall include coverage for claims resulting from acts of forbearance that cause or exacerbate pollution and claims of bodily injury and property damage in the amount of \$1,000,000 minimum coverage per occurrence, \$3,000,000 annual aggregate. This insurance is required of all professional firms who conduct professional environmental services including, but not limited to, any of the following services:

- (i) Remedial System Design.
- (ii) Remediation Management.
- (iii) Feasibility Development and Implementation.
- (iv) Hydrogeological Evaluation.
- (v) Media Testing and Analysis.
- (vi) Subsurface and Geophysical Investigation.
- (vii) Other related activities as determined by the Department.

Required Limits	Additional Requirements
Commercial General Liability Insurance	
<u>Minimum Limits:</u> \$1,000,000 Each Occurrence Limit \$1,000,000 Personal & Advertising Injury Limit \$2,000,000 General Aggregate Limit \$2,000,000 Products/Completed Operations	Professional must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds using endorsement CG 20 10 11 85, or both CG 20 10 12 19 and CG 20 37 12 19.
Umbrella or Excess Liability Insurance	
<u>Minimum Limits:</u> \$2,000,000 General Aggregate	Professional must have their policy follow form.
Automobile Liability Insurance	
<u>Minimum Limits:</u> \$1,000,000 Per Accident	Professional must have their policy: (1) endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds; and (2) include Hired and Non-Owned Automobile coverage.
Workers' Compensation Insurance	
<u>Minimum Limits:</u> Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liability Insurance	
<u>Minimum Limits:</u> \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease.	
Professional Liability (Errors and Omissions) Insurance	
<u>Minimum Limits:</u> \$1,000,000 Each Occurrence \$2,000,000 Annual Aggregate <u>Deductible Maximum:</u> \$50,000 Per Loss	

Environmental and Pollution Liability (Errors and Omissions) ***	
<u>Minimum Limits:</u> \$1,000,000 Each Occurrence \$2,000,000 Annual Aggregate	Professional must have their policy: (1) be applicable to the work being performed, including completed operations equal to or exceeding statute of repose; (2) not have exclusions or limitations related to Transportation (upset overturn, spills during loading or unloading, Hazardous Materials Handling, and Non-Owned disposal site liability; and (3) endorsed to add "the State of Michigan, its departments, division, agencies, offices, commissions, officers, employees, and agents" as additional insured.

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Contractual Liability insurance for claims for damages that may arise from the Professional's assumption of liability on behalf of the State under Article VI concerning indemnification for errors, omissions, or negligent acts in the course of the professional service or other provision within this Contract to the extent that such kinds of contractual liability are insurable in connection with and subject to limits of liability not less than for the general liability insurance and the professional liability insurance and set forth in subsections (c) and (d) above.

Except where the State has approved a subcontract with other insurance provisions, the Professional must require any Consultant/Subcontractor to purchase and maintain the insurance coverage required in this Article. Alternatively, the Contractor may include a Consultant/Subcontractor under the Professional's insurance on the coverage required in that Section. The failure of a Consultant/Subcontractor to comply with insurance requirements does not limit the Professional's liability or responsibility.

Certificate of Insurance documents, acceptable to the State, shall be provided and filed with the Department prior to commencement of the Professional's Project services, unless otherwise approved in writing, and not less than 20 days before the insurance expiration date every year thereafter. Facsimile copies of the Certificate of Insurance will not be accepted. Certificate of Insurance documents must be either submitted hard copy or portable document file (.pdf). The Certificate of Insurance documents must specify on the certificate in the oblong rectangle space labeled "Description of Operations/Locations/Vehicles/Exclusions Added By Endorsement/Special Provisions/Special Items" the following items: **(1) The ISID Title; (2) The ISID Contract Number; and (3) The State of Michigan must be named as an "Additional Insured on the General Liability and Automobile Insurance Policy."** The Certificate of Insurance documents shall contain a provision that the Project insurance coverage afforded under the insurance policies for this Contract will not be modified or canceled without at least thirty (30) consecutive calendar days prior written notice, except for 10 days for non-payment of premium, to the State of Michigan, Department.

This Section is not intended to and is not to be construed in any manner as waiving, restricting, or limiting the liability of either party for any obligations under this Contract (including any provisions hereof requiring Professional to indemnify, defend and hold harmless the State).

The attached, Certificates of Insurance documents required for this Project shall be in force for this Project until the final payment by the State to the Professional is made and shall be written for not less than any limits of liability specified above. The Professional has the responsibility for having their consultant firms comply with these insurance requirements.

ARTICLE VI INDEMNIFICATION

- (a) To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from liability, including all claims and losses, and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest, and penalties), accruing or resulting to any person, firm or corporation that may be injured or damaged by the Professional in the performance of this Contract and that are attributable to the negligence or tortious acts of the Professional or any of its Subcontractors/Consultants, or by anyone else for whose acts any of them may be liable.
- (b) Employee Indemnification: In any and all claims against the State of Michigan, its departments, divisions, agencies, boards, sections, commissions, officers, employees and agents, by any employee of the Professional or any of its Subcontractors/Consultants, the indemnification obligation under this Contract shall not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the Professional or any of its Subcontractors/Consultants under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in provisions, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other provisions.
- (c) Patent/Copyright Infringement Indemnification: To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest, and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that such action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the Professional or its Subcontractors/Consultants, or the operation of such equipment, software, commodity or service, or the use of reproduction of any documentation provided with such equipment, software, commodity or service infringes any United States patent, copyright, trademark or trade secret of any person or entity, which is enforceable under the laws of the United States.

In addition, should the equipment, software, commodity, or services, or its operation, become or in the State's or Professional's opinion be likely to become the subject of a claim of infringement, the Professional shall at the Professional's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if such option is not reasonably available to the Professional, (ii) replace or modify to the State's satisfaction the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if such option is not reasonably available to Professional, (iii) accept its return by the State with appropriate credits to the State against the Professional's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

Notwithstanding the foregoing, the Professional shall have no obligation to indemnify or defend the State for, or to pay any costs, damages or attorneys' fees related to, any claim based upon (i) equipment developed based on written specifications of the State; or (ii) use of the equipment in a configuration other than implemented or approved in writing by the Professional, including, but not limited to, any modification of the equipment by the State; or (iii) the combination, operation, or use of the equipment with equipment or software not supplied by the Professional under this Contract.

ARTICLE VII OWNERSHIP OF DOCUMENTS

All Project deliverables, including but not limited to: reports, Bidding Documents, Contract Documents, electronic documents and data, and other Project related documents, including the copyrights, prepared and furnished by the Professional shall become the property of the State of Michigan upon completion of the Project, completion and acceptance of the professional's work, or upon termination of the Contract. Project deliverables shall be delivered to the Department upon their request. The Professional shall have no claim for further employment or additional compensation as a result of this Contract requirement. The Professional may retain a copy of all Project documents for their files.

If the Professional is in default or breach of its obligations under this Contract, the State shall have full ownership rights of the Project deliverables, including Bidding Documents and Contract Documents, including all electronic data. If the Professional is in default or this Contract Agreement is terminated, the State shall not use the Contract Documents and deliverables of this Contract for completion of the Project by others without the involvement of other qualified Professionals who shall assume the professional obligations and liability for the Project work not completed by the Professional.

To the fullest extent allowed by law, the State releases the Professional, the Professionals Consultant(s) and the agents and employees of any of them from and against legal claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of the State's use of the Contract Documents other than in accordance with this Contract Agreement.

All Contract deliverables listed may be published or issued for informational purposes without additional compensation to the Professional. The Professional may not use any of the Contract Documents and Contract deliverables for any purpose that may misrepresent the professional services they provided.

The Professional shall retain full rights to the Contract Documents and deliverables and the right to reuse component information contained in them in the normal course of the Professional's professional activities.

The Contract deliverables, Contract Documents, or other documents produced under this Contract may be used by the Department, or others employed by the Department or State of Michigan, for reference in any completion, correction, remodeling, renovation, reconstruction, alteration, modification of or addition to the Project, without monetary compensation to the Professional.

The State of Michigan will not construct additional Projects or buildings based on the work of this Contract without notice to the Professional. Whenever renderings, photographs of renderings, photographs or models, or photographs of the Project are released by the State of Michigan for publicity, proper credit for design shall be given to the Professional, provided the giving of such credit is without cost to the State of Michigan.

ARTICLE VIII TERMINATION

The State may, by written notice to the Professional, terminate this Contract and/or any Assignments, in whole or in part at any time, either for the State's convenience or because of the failure of the Professional to fulfill their Contract obligations. Upon receipt of such notice, the Professional shall:

- a) Immediately discontinue all professional services affected (unless the notice directs otherwise), and
- b) Deliver to the State all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by the Professional in performing this Contract, whether completed or in process.

8.1 If the termination is for the convenience of the State, an equitable adjustment in the Contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed professional services.

8.2 If the termination is due to the failure of the Professional to fulfill their Contract obligations, the State may take over the work and prosecute the same to completion by Contract or otherwise. In such case, the Professional shall be liable to the State for any additional cost occasioned to the State thereby.

- 8.3 If, after notice of termination for failure to fulfill Contract obligations, it is determined that the Professional had not so failed, the termination shall be deemed to have been affected for the convenience of the State. In such event, adjustment in the Contract price shall be made as provided in Section 8.1 of this article.
- 8.4 The rights and remedies of the State provided in this article are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE IX SUCCESSORS AND ASSIGNS

This Contract shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns; provided, however, that neither of the parties hereto shall assign this Contract without the prior written consent of the other.

ARTICLE X GOVERNING LAWS

This Contract shall be construed in accordance with the current laws of the State of Michigan. Some Assignments to this Contract will be funded wholly or in part by the Federal Government through grant agreements and/or federal programs. The Professional must comply with such funding requirements along with any current applicable federal regulations in performing the tasks described in the Scope of Work, including but not limited to the following current federal regulations. The absence of reference to any law or regulation does not preclude its applicability to this Contract.

1. The Comprehensive Environmental Response Compensation and Liability Act of 1980 as amended CERCLA (The Superfund Act);
2. Section 306 of the Clean Air Act (42 U.S.C. 1857 (h));
3. Section 508 of the Clean Water Act (33 U.S.C. 1368);
4. Public Law 98-473 as implemented in the Department of the Interior, Bureau of Indian Affairs;
5. Executive Order 11738; Office of Management and Budget Circular A-87, "Cost Principles for State, Local, and Indian Tribal Governments."
6. 25 CFR Part 20; Financial Assistance and Social Services Programs
7. 40 CFR Part 31; Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments
8. 40 CFR Part 32 Subpart F; Drug-Free Workplace
9. 40 CFR Part 33; Participation by Disadvantaged Business Enterprises in United States Environmental Protection Agency Programs
10. 40 CFR Part 35; State and Local Assistance

11. 40 CFR Part 35 Subpart 0; Cooperative Agreements and Superfund State Contracts for Superfund Response Actions

12. 48 CFR Chapter 1 Part 31 Subpart 31.2; Contracts with Commercial Organizations.

ARTICLE XI NONDISCRIMINATION

In connection with the performance of the Project under this, the Professional agrees as follows:

- a) The Professional will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, age, sex (as defined in *Executive Directive 2019-09*), height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position. The Professional will provide equal employment opportunities to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position.

Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

- b) The Professional will, in all solicitations or advertisements for employees placed by or on behalf of the Professional, state that all qualified applicants will receive equal employment opportunity consideration for employment without regard to race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position.
- c) The Professional or their collective bargaining representative will send to each labor union or representative of workers with which is held a collective bargaining agreement or other Contract or understanding, a notice advising the said labor union or workers' representative of the Professional's nondiscrimination commitments under this article.
- d) The Professional will comply with the Elliot-Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2201 et seq; the Michigan Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 et seq; *Executive Directive 2019-09*; and all published rules, regulations, directives and orders of the Michigan Civil Rights Commission which may be in effect on or before the date of award of this Contract.
- e) The Professional will furnish and file nondiscrimination compliance reports within such time and upon such forms as provided by the Michigan Civil Rights

Commission; said forms may also elicit information as to the practices, policies, program, and employment statistics of the Professional and of each of their Consultant firms. The Professional will permit access to all books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain nondiscrimination compliance with this Contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Article 6, 1976 PA 453, as amended.

- f) In the event that the Michigan Civil Rights Commission finds, after a hearing held pursuant to its rules, that the Professional has not complied with the contractual nondiscrimination obligations under this Contract, the Michigan Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the State Administrative Board of the State of Michigan, which the State Administrative Board may order the cancellation of the Contract found to have been violated, and/or declare the Professional ineligible for future Contracts with the State and its political and civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the Professional complies with said order of the Michigan Civil Rights Commission.

Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the Professional is declared ineligible to Contract as a contracting party in future Contracts. In any case before the Michigan Civil Rights Commission in which cancellation of an existing Contract is a possibility, the State shall be notified of such possible remedy and shall be given the option by the Michigan Civil Rights Commission to participate in such proceedings.

- g) The Professional shall also comply with the nondiscrimination provisions of 1976 PA 220, as amended, concerning the civil rights of persons with physical or mental disabilities.
- h) The Professional will include, or incorporate by reference, the nondiscrimination provisions of the foregoing paragraphs a) through g) in every subcontract or Contract Order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission, and will provide in every subcontract or Contract Order that said nondiscrimination provisions will be binding upon each of the Professional's Consultant's or seller.

ARTICLE XII

CONTRACT CLAIMS AND DISPUTES

In any claim or dispute by the Professional which cannot be resolved by negotiation, the Professional shall submit the claim or dispute for an administrative decision by the Department of Technology, Management and Budget, Director of State Facilities Administration within thirty (30) consecutive calendar days of the end of the disputed negotiations, and any decision of the Director of State Facilities Administration may be appealed to the Michigan Court of Claims within one (1) year of the issuance of the Director's decision.

The Professional agrees that the Department's appeal procedure to the Director of State Facilities Administration is a prerequisite to filing a suit in the Michigan Court of Claims.

ARTICLE XIII DEFINITION OF TERMS

The definition of terms and conditions of this Contract are described and outlined in the following Articles I through XIV and attached appendices. The capitalized defined terms used in this Professional Services Contract shall have the following definitions:

ADDENDA: Written or graphic numbered documents issued by the Department and/or the Professional prior to the execution of the Construction Contract which modify or interpret the Project Bidding Documents, including drawings, and specifications, by additions, deletions, clarifications or corrections. The Addenda shall: (1) Be identified specifically with a standardized format; (2) Be sequentially numbered; (3) Include the name of the Project; (4) Specify the Project Index No., Project File No., the Contract Order No. Y, and a description of the proposed Addenda; and (5) Specify the date of Addenda issuance. As such, the Addenda are intended to become part of the Project Contract Documents when the Construction Contract is executed by the Professional's recommended lowest responsive, responsible qualified Construction Contractor.

An Addendum issued after the competitive construction Bid opening to those construction Bidders who actually submitted a Bid, for the purpose of rebidding the Project work without re-advertising, is referred to as a post-Bid Addendum.

AGENCY PROJECT MANAGER: The assigned staff of the Department or the State/client Agency authorized by the State to represent and act on behalf of the Project Director on a given Project and to thereby provide direction and assistance to the Construction Contractor. The Agency Project Manager may designate in writing a person to act on behalf of the Agency Project Manager when they are unable to perform their required duties or is away from the office. In such cases, the Agency Project Manager must notify the Construction Contractor and the Project Director.

AGENCY FIELD INSPECTOR: An employee of the State of Michigan under the direction of the State/client Agency who provides the on-site, Inspection of construction Projects for compliance with the study/design intent of the Professional firm's Contract Documents/drawings and specification requirements and the building construction codes. The Agency Field Inspector is the liaison between the Construction Contractor, the Professional, and the Agency Project Manager. The Agency Project Manager, or their Agency Field Inspector, has the authority to require the Professional to respond to and resolve study/design related problems, construction on-site field problems and to attend Project related meetings.

BID: A written offer by a construction Bidder for the Department. Project construction work, as specified, which designates the construction Bidder's base Bid and Bid price for all alternates.

BIDDER: The person acting directly, or through an authorized representative, who submits a competitive construction Bid directly to the Department.

BIDDING DOCUMENTS: The Professional's Project Contract Documents as advertised, and all Addenda issued before the construction Bid opening, and after the construction Bid opening, if the Project construction work is rebid without re-advertising. Bidding Documents shall consist of the Phase 500 - Final Design drawings and specifications, any Addenda issued, special, general, and supplemental conditions of the Construction Contract, and modifications, if any, to standard forms provided by the Department. Such forms consist of the Project advertisement, the instructions to Bidders, the proposal forms, general, supplemental, and any special conditions of the Construction Contract, and the form of agreement between the Department and the Construction Contractor for the Project work requirements.

BID SECURITY: The monetary security serving as guarantee that the Bidder will execute the offered Construction Contract or as liquidated damages in the event of failure or refusal to execute the Construction Contract.

BUDGET: The maximum legislatively authorized Budget amount to be provided by the State of Michigan and available for a specific purpose or combination of purposes to accomplish the Project for this Contract.

BULLETIN: A standard document form (DTMB-0485, Bulletin Authorization No. and the DTMB-0489, Instructions to Construction Contractors for Preparation of Bulletin Cost Quotations for Contract Change Orders) used by the Department to describe a sequentially numbered change in the Project under consideration by the Department and the Professional and to request the Construction Contractor to submit a proposal for the corresponding adjustment in the Contract price and/or Contract time, if any. These standard document forms are a part of the "DTMB-0460, Project Procedures" documents package.

CONSTRUCTION CONTRACT: A separate written Contract agreement between the Construction Contractor and the Department for the construction, alteration, demolition, repair, or rebuilding of a State/Client Agency building or other State property.

CONSTRUCTION CONTRACTOR: Any construction firm under a separate Contract to the Department for construction services.

CONSTRUCTION INSPECTION SERVICES: The Professional's field Inspections of the Project during the construction Phase of this Contract which includes but is not limited to: (1) Documenting the quantity and quality of all Project construction work and verifying that the Project construction work is properly completed; (2) Resolve Project problems that are affecting the Project construction work, certify payment requests, process Bulletins, Contract Change Order recommendations, and requests for information (RFI's) in a timely manner as prescribed in the Department's, "MICHSPEC 2001 Edition of The Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)" or the current Department, DTMB Short Form 401 - Proposal and Contract/Front-End Package for Small Projects for Professional Services Contractors (PSC) with General Conditions for Construction and Instructions to Bidders" as adopted and modified by the State of Michigan and incorporated into the Construction Contract; and the (3) Inspection of Project construction work completed or in progress by the Construction Contractor to determine and verify to the Department's Project

Director/Agency Project Manager and their Department Field Representative that the Project construction work is in compliance with the Professional's design intent and that the Project has been completed by the Construction Contractor in accordance with the Professional's Phase 500 - Contract Documents/drawings and specifications requirements.

The Professional shall provide sufficient Inspections of the Project during the construction Phase to administer the construction Phase field and office services as directly related to the degree of Project complexity, up to and including full-time field Inspections. Construction field Inspections shall occur as the construction field conditions and the Project may require and during the regularly scheduled monthly progress and payment meetings.

The Professional shall use for their construction field Inspection services, only personnel having professional expertise, experience, authority, and compatibility with departmental procedures as the Department may approve. The Professional agrees that such characteristics are essential for the successful completion of the Project. Such individuals shall be replaced for cause where the Department determines and notifies the Professional, in writing, of their unacceptable performance.

CONSULTANT: Any individual, firm, or employee thereof, not a part of the Professional's staff, but employed by the Professional and whose professional service cost is ultimately paid by the State of Michigan, either as a direct cost or authorized reimbursement. This includes the recipient(s) of Contract Orders for material, support, and/or technical services. Also, included are persons and firms whose management and/or direction of services are assigned to the Prime Professional as may be provided elsewhere in this Contract.

CONTRACT CHANGE ORDER: A standard document form (DTMB-0403) issued and signed by the State of Michigan and signed by the Professional which amends the Project Design Professional's Contract Documents for changes in the Project/Program Statement or an adjustment in Contract price and/or Contract time, or both.

CONTRACT DOCUMENTS: The Professional's Phase 100 – Study, Final Report and Phase 500 - Final Design plans/drawings, specifications, Construction Contract, instructions to construction Bidders, proposal, Bidding Documents, agreement, conditions of the Contract, payment bond, performance/labor and material bond, prevailing wages, all Addenda, and attachments as may be necessary to comprise a Construction Contract for the Project. Specifications for this Contract will be prepared for Division 00 through 49, in the current version MasterFormat Outline by the Construction Specifications Institute (C.S.I.), as appropriate for the Project.

CONTRACT MODIFICATION: A form (DTMB-0410) amending the Contract signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from changes in the Project/Program Statement or previously unknown on-site field conditions as approved by the Department will be compensated to the Professional by way of the Contract Modification in accordance with the Article II, Compensation text of this Contract.

Any Contract Modification of this Professional Services Contract must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the Department may require. No Contract Modification will be approved to compensate the Professional for correcting, or for responding to claims or litigation for, the Professional's Phase 100 – Study, Final Report and Phase 500 - Contract Documents study/design errors, omissions or neglect on the part of the Professional.

CONTRACT ORDER: A form (DTMB-0402) issued and signed by the State of Michigan authorizing a Professional to: (1) Begin to incur Project expenses and proceed with the Project on-site; and (2) Provide professional services for the fee amount designated in the Phases of the Contract Order. Issuance of the DTMB-0402 certifies that: (1) The State will enter into a Professional Services Contract for the professional services described in the various Phases of this Contract; and that (2) The proper three (3) sets of Certificate of Insurance documents have been received and accepted by the State along with the approval and signing of the Professional's Professional Services Contract by the SFA, DCD Director.

DEPARTMENT: The Department of Technology, Management and Budget, Facilities and Business Administration, Design and Construction Division. The Department will represent the State of Michigan in all matters pertaining to this Project. This Professional Services Contract will be administered through the Department on behalf of the State of Michigan and The State/Client Agency.

DESIGN MANUAL: Provides the Professional with information regarding the Department's current "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" review process requirements regarding the uniformity in Contract materials presented to it by the Professional and the State/Client Agency(ies). This manual contains the following noted standards, instructions, and procedures information for: (1) General instructions for planning documents from Phase 100-Study through Phase 500-Final Design; (2) Net and gross area/volume; (3) Project cost format; (4) Outline architectural and engineering specifications; (5) Specifications in documentation Phase; (6) Instructions for proposal; (7) Bidders questionnaire; and the (8) Project job sign.

DIRECTOR: The Director of the Department of Technology, Management and Budget or their authorized State of Michigan representative.

DIRECTOR-SFA: The Director of the Department of Technology, Management and Budget, State Facilities Administration or their authorized State of Michigan representative.

DEPARTMENT FIELD REPRESENTATIVE: An employee of the State under the direction of the Department who provides the Inspection of construction Projects for compliance with the design intent of the Professional's Phase 500 - Contract Documents/architectural and/or engineering drawings and specification requirements and the building construction codes. The Department Field Representative is the liaison between the Construction Contractor, the Professional, and the Project Director/Agency Project Manager. The Project Director/Agency Project Manager, or their Department Field Representative, has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project

meetings. Unless delegated by specific written notice from the Department, the Department Field Representative has no authority to order any changes in the Project scope of work or authorize any adjustments in Contract price or Contract time.

INSPECTION: The Professional and their Consultant firm's on-site and/or off-site examination of the Project construction work completed or in progress by the Construction Contractor to determine and verify to the Department's, Project Director/Agency Project Manager and their Department Field Representative that the quantity and quality of all Project construction work is in accordance with the design intent of the Professional's Phase 500 - Contract Documents/ drawings and specifications requirements.

KEY PRINCIPAL PERSONNEL/EMPLOYEE: An individual employee of a Professional who is essential for the successful completion of the Project.

NOTICE OF INTENT TO AWARD: A written notice to the Construction Contractor, by the Department accepting the Professional's written recommendation to award the construction Bid to the lowest responsive, responsible qualified construction Bidder. The Notice of Intent to Award letter will also designate the Contract price and itemize the alternates that the Department, at its sole discretion has accepted.

PHASE: A discretely distinguishable step necessary to produce the Project in the course of the Professional providing study, design and construction administration services.

PRIME PROFESSIONAL SERVICES CONTRACTOR/PROFESSIONAL: An individual, firm, partnership, corporation, association, or other legal entity who is legally permitted by law to sign and seal final design construction Contract Documents and licensed under the State of Michigan's professional licensing and regulation provisions of the Occupational Code (State Licensing Law), Act 299 of the Public Acts of 1980, Article 20, as amended, to practice architecture, engineering, environmental engineering, geology, civil, land surveying, or landscape architecture services in the State of Michigan.

The Prime Professional Services Contractor/Professional is also legally permitted by the State of Michigan's regulation provisions of the State Construction Code, Act 230 of the Public Acts of 1972, as amended, and designated in a Construction Contract by the Department to recommend construction progress payments to the Construction Contractor.

PROJECT: Any new construction, existing site, new utilities, existing building renovation, roof repairs and/or removal and replacement, additions, alteration, repair, installation, construction quality control and material testing services, painting, decorating, demolition, conditioning, reconditioning or improvement of public buildings, works, bridges, highways or roads authorized by the Department that requires professional study/design services as part of this Contract.

PROJECT COST: The total Project cost including, but not limited to, site purchase, site survey and investigation, hazardous material abatement, construction, site development, new utilities, telecommunications (voice and data), professional fees, construction quality control and material testing services, testing and balancing services, furnishings, equipment, plan(s)/drawing(s) design code compliance and plan review approval fees and all other costs associated with the Project.

PROJECT DIRECTOR: The professional licensed employee of the Department who is responsible for directing and supervising the Professional's services during the life of this Contract. The Project Director, or their Department Field Representative, has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project related meetings.

PROJECT/PROGRAM STATEMENT: The Project/Program Statement is provided by the Department and defines the scope of the problem, describes why this Project is desirable, and provides a preferred resolution of the problem.

PROJECT TEAM: The Professional, the Project Director/Agency Project Manager, Department Field Representative, a representative of the State/Client Agency, and others as considered appropriate by the Department.

PUNCH LIST: A list of minor construction Project items to be completed or corrected by the Construction Contractor, any one of which do not materially impair the use of the Project work, or the portion of the Project work inspected, for its intended purpose. A Punch List shall be prepared by the Professional upon having made a determination that the Project work, or a portion of the Project construction work inspected, in concert with the Professional, the Construction Contractor, the Department, the Project Director/Agency Project Manager and their Department Field Representative, and any construction manager, is substantially complete and shall be attached to the respective DTMB-0455, Certificate of Substantial Completion form. This standard document form is a part of the "DTMB-0460, Project Procedures" documents package.

SOIL EROSION AND SEDIMENTATION CONTROL: The planning, design and installation of appropriate Best Management Practices (as defined by the most current version of the Department's Soil Erosion and Sedimentation Control Guidebook) designed and engineered specifically to reduce or eliminate the off-site migration of soils via water runoff, wind, vehicle tracking, etc. and comply with the Soil Erosion and Sedimentation Control in the State of Michigan as regulated under the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act, Part 91 – Soil Erosion and Sedimentation Control. Soil Erosion and Sedimentation Control associated with this Contract will be monitored and enforced by the Department of Technology, Management and Budget, State Facilities Administration, Soil Erosion and Sedimentation Control Program.

STATE: The State of Michigan in its governmental capacity, including its departments, agencies, boards, commissions, officers, employees, and agents. Non-capitalized references to a state refer to a state other than the State of Michigan.

STATE/CLIENT AGENCY: A Department of the State of Michigan, for whose use the Project will ultimately serve, which requires professional design services.

SUBSTANTIAL COMPLETION: The form (DTMB-0445) stating that the Project work, or a portion of the Project work eligible for separate Substantial Completion, has been completed in accordance with the design intent of the Professional's Contract Documents to the extent that the Department and the State/Client Agency can use or occupy the entire Project work, or the designated portion of the Project work, for the use intended without any outstanding, concurrent work at the Project work site, except as may be required to complete or correct the Project work Punch List items.

SUSTAINABLE DESIGN: The Professional's use of a balance of appropriate materials, products and design methods that reduce the impact to the natural ecosystems and be within the Budget constraints of the Project. Sustainable Design shall be used wherever possible by the Professional in their Project design and an itemized list shall be provided with the Professional's Contract Documents that identifies the processes and products.

TASK: Shall mean the following: (1) A quantifiable component of design related professional study/design Task services required to achieve a Phase of the Project; (2) The most manageable sub-element within a study/design Phase; (3) A unique item of work within a study/design Phase for which primary responsibility can be assigned; and (4) Has a time related duration and a cost that can be estimated within a study, design, and construction Phase.

ARTICLE XIV COMPLETE AGREEMENT / MODIFICATION

This Professional Services Contract constitutes the entire agreement as to the Project between the parties. Any Contract Modification of this Contract and the Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for the Professional firm's final design Contract Documents/study/design errors, omissions or neglect on the part of the Professional.

APPENDIX 1

PROJECT/PROGRAM STATEMENT

APPENDIX 2

PROFESSIONAL'S PROPOSAL

APPENDIX 3
PROFESSIONAL CERTIFICATION FORMS

SAMPLE

APPENDIX 4

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICES CONTRACTOR FIRM'S HOURLY BILLING RATE CALCULATION

SAMPLE

APPENDIX 5

CERTIFICATES OF INSURANCE

SAMPLE



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design and Construction Division

REQUEST FOR PROPOSAL
ADDENDUM NO. 01

This form identifies an Addendum to a Request for Proposal for Professional Services, and incorporates interpretations or clarifications, modifications, and other information into the Request for Proposals. Addenda will be numbered by the Project Director and distributed through SIGMA Vendor VSS as an attachment.

TO: ALL PROPOSERS	DATE ISSUED December 7, 2022
PROJECT NAME 2023 Environmental Services ISID	FILE NUMBER N/A
PROJECT DIRECTOR Indumathy Jayamani	PROPOSAL DUE DATE: Thursday, January 12, 2023

ADDENDUM ITEMS: (attach additional sheets and drawings if required)

This addendum is to clarify the date for questions.

Questions are to be emailed to Indumathy Jayamani at jaymanii1@michigan.gov, no later 2:00 p.m., EASTERN than on Friday, December 16, 2022

APPROVED BY:

PROJECT DIRECTOR Indumathy Jayamani

DATE December 6, 2022

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
3111 W. St. Joseph Street
Lansing, Michigan 48917
ADDENDUM NO. 2

To: **All applicants and interested parties**

Date: December 21, 2022

Subject: **Department of Technology, Management and Budget (DTMB)**
2023 Environmental Remediation ISID RFP
Professional Environmental Consulting Services
Various Locations, Michigan
Request for Proposal

Please acknowledge receipt of this Addendum in your proposal.

Questions and Answers:

The following questions have been compiled to clarify answers to questions regarding portions of the RFP package:

Q1. Please confirm only one sample 1-week period of field activity logs and a sample weekly report must be provided with the proposal and not under each scope area.

A1. Confirmed.

Q2. Based on the RFP text that Section II-4 is “not required at this time.” Please confirm DTMB is not expecting the consultant to provide an outline or any response to this requirement in the proposal at this time and it will only be “required at the time of future assignments”?

A2. Confirmed.

Q3. Please confirm which format is required for a proposal response: A) Only one questionnaire is required for the entire submission with the appropriate scope categories checked, regions checked, and applicable references/personnel for each desired scope; or B) A questionnaire is required for each scope category checked with applicable references/personnel for that desired scope (understanding there likely will be repetition across multiple questionnaires from a single company)?

A3. Only one questionnaire is required for the submission.

Q4. Please confirm whether or not a standalone document addressing Sections II-1 through II-6 of the RFP is required with the Questionnaire as part of this document (II-5) OR can just the Qualifications Questionnaire be submitted as the primary headings of Sections II-1 through II-6 are addressed within the Questionnaire?

A4. Yes, a written narrative addressing Section II-1 through Section II-6 (Section II-4 is for reference only, see A2), must accompany the questionnaire.

Q5. The RFP asks the respondent to provide "...at least three (3) projects in the last five years closely related to each of the project types". Is it acceptable for the respondent to provide a project example(s) that was completed while under the employ of another company?

A5. No, the project's provided as example should have been completed by the company responding to the RFP.

Q6. The Questionnaire and Proposal Format Part I – Technical, appear redundant. The RFP includes, "NOTE: Any information provided in one location can be referenced as needed in other locations." Please confirm that statements such as, "Refer to Questionnaire Response 5.1." or "Refer to Proposal Response II-4." is sufficient if a response is provided in one of the two documents. Or is the format intentionally redundant and EGLE requires a response in both locations, with a more expansive response provided in the proposal response narrative?

A6. For any information that is already provided in the questionnaire, referring that information is sufficient.

Q7. The billing rate document example provided as II-2-A. Position, Classification and Employee Billing Rate Information is similar, but differs from the MS Word document 2023 Environmental Fillable Position Class Billing Rate Worksheet (rev 221205). Please confirm the MS Word document is the format to include in the submittal.

A7. Confirmed.

Q8. Will EGLE include a list of sites and project types that will be included in the ISID contract in Year 1?

A8. No.

Q9. Is there a limit or targeted number of vendors the Department/Advisory Committee will offer a contract?

A9. No.

Q10. May respondents modify the 2023 Environmental Questionnaire to include additional project reference information (i.e., Project 4 Reference Information, Project 5 Reference Information)?

A10. Yes.

Q11. Page 9 of the proposal states, "The following items B, C, and D will be required only at the time a proposal for an individual assigned project is requested."; however, the statement is followed by bulleted items A, B, C. Please clarify.

A11. Typo noted. The Bullets should have been named B, C, and D.

Q12. Section I-9 of the RFP ("Proposals") states "when uploading, your attachment(s) the attachment must be 6mb or less." Can a bidder's proposal consist of more than one attachment, each being less than 6mb?

A12. Yes.

Q13. RFP, Section II, Part 1 Technical; Section II-3 Personnel. Please provide further detail regarding what is meant by chronological.

A13. Resumes of all proposed Key Personnel should include the period the experience occurred.

Q14. RFP, Section II, Part 1 Technical; II-5 Questionnaire? Please clarify what is meant by "narrative addressing the items above".

A14. See A4.

Q15. Questionnaire, Article 1, subsections 3, requests an organization chart depicting key personnel and their roles for a typical assigned project. The projects under this contract are anticipated to include a wide range of scopes and required skill sets. Please provide additional detail on what constitutes a typical assigned project for use in developing the requested organizational chart.

A15. The organizational chart should note the Key Personnel and staff needed for the project types and services identified in the questionnaire.

Q16. Questionnaire, Article 1, subsections 5, states "provide a four-year rate schedule per position". What is being asked for here? Is this different from II-2-A Position, Classification and Employee Billing Rate Information?

A16. The same information is being requested in both places.

Q17. Page 6 of the RFP states “when entering the proposal amount, please enter the total cost amount as \$1.00”, but the Project Statement states, “please enter the total cost for all phases as the bid amount.” Which method is preferred?

A17. Discrepancy noted. Please enter the bid amount as “\$1.00” as stated in the RFP.

Q18. In section II-2 of the RFP (page 6) states that the bidder should “Indicate which of these individuals you consider to be “Key Personnel” for the successful completion of these project types, identify them by position and classification and provide their resumes.” Should resumes only be included for individuals that meet the “Professional Key Personnel” criteria in the “Guidelines for Position Classifications” or can we include resumes for personnel we consider key, but may be considered non-key in the position classification criteria?

A18. Yes.

Q19. Section II of the RFP (proposal format) states that the proposal must be submitted in the format outlined. However, in subsection II-4 “Management Summary, Work Plan, and Schedule,” it is noted that this section is for reference only. May we omit this section heading from our proposal?

A19. See A2.

Q20. Question 4 in Article 1 of the questionnaire asks about recent changes in organizational structure (e.g., management team) or control of your company. Please define recent.

A20. Any changes within the past 12 months.

Q21. Several of the questionnaire questions, especially in Article 5, appear to request a singular number answer (as a percentage or number of days/weeks). We believe it may be helpful to provide more context for several of these questions. Will that type of response be accepted, or shall we limit our response to the singular, numerical answer only?

A21. At a minimum the percentage is required.

Q22. Article 6 of the questionnaire includes 5 Key Personnel. Should these include only the “Level 4” key personnel as described in the Guidelines for Position Classification or all Level 3 and Level 4 Key Personnel. If the latter, may we add an attachment for additional Key Personnel beyond the 5 spaces included in the questionnaire?

A22. See A18. Additional spaces can be added as needed.

Q23. In Article 6 of the questionnaire, questions 6.3 and 6.4 refer to the Professional Project Manager. Can you define "Professional Project Manager." Can this be more than one person?

A23. Please refer to the Guidelines for Position Classifications. Yes, Project Manager, can be more than one person.

Q24. The RFP asks in II-2 for an "Outline your experience with similar projects, sites, and clients as examples." The ask for similar project descriptions is repeated in II-6 and in Article 8 of the questionnaire. Is there a preference for which section includes the project examples?

A24. Responses are required for both parts. Also, see A6.

Q25. Page 6 of the Scope of Work document indicates that the Professional shall arrange for all its employees that will be working on a contaminated site to attend a health and safety training course, and/or a personnel protection course. Can you specifically identify which safety training courses are required?

A25. The professional, needs to identify all training required by State and Federal laws for personal working on a particular site type, and ensure that their employees working on that project/site have the necessary training.

Q26. RFP Page 8 and 12, Table II-2-A: Do we input employee names on this table? And classification (from "Guidelines for Position Classifications")?

A26. Yes.

Q27. Under Article 8 of the Questionnaire, is it expected we provide three references overall that encompass all the service areas we select or three references per service area.

A27. Please ensure you provide a minimum of three references per service area.

Q28. Please clarify the preference provisions for Michigan-based firms. Preference is not stated in the RFP document, but it is stated in the Scope of Work, and a certification form is attached to the RFP. If there is a preference, how is it applied?

A28. None.

Q29. Are there any preference provisions for Small Business Enterprises or Disadvantaged Business Enterprises?

A29. None.

Q30. The RFP states that "The ISID contracts will supplement, but not replace, standard requests for proposals or qualifications as a method for obtaining professional services." Please clarify how this contract will be used to supplement other methods for obtaining professional services.

A30. ISID contract is a standalone method in addition to the standard request for proposal process.

Q31. The RFP states that "DCD reserves the option of requesting ...proposals from more than one professional for a particular project." Please clarify the conditions, metrics or process for how the DCD decides whether to ask multiple ISID contract-holders to submit proposals for the same project.

A31. This will be decided on a case-by-case basis.

Q32. Are any terms of this (sample) contract negotiable, including, but not limited to, subjects of Indemnification, defend and hold harmless, and limitation of liability?

A32. No.

Q33. The scope of work states "The Professional's personnel and the personnel of its sub-consultants/subcontractors will be required, if requested by the Agency Project Manager on behalf of EGLE's attorneys, to provide assistance to the State in the form of participation in legal actions against alleged responsible parties... including the preparation and execution of interrogatories, affidavits, and testimony as a fact witness..." "The State will reimburse the Professional for such assistance as described above at the contractually approved rates for the Professional's personnel at the time services are required." May respondents submit classification-based labor rates for litigation support with the schedule of Position, Classification, and Employee Billing Rate Information, to be approved in the contract? And similarly, for Expert Witness Fees?

A33. The hourly billing rates for these types of services can be included.

Q34. Are subcontractors bound to contract rates (provided in the rate sheet)?

A34. No.

Q35. Can a sub (contractor) do lumpsum on the task orders?

A35. Payment of subcontractors is determined between the contractor and subcontractor.

Q36. Experience (questionnaire) – Do project examples need to be Michigan-specific (extra points?) or countrywide?

A36. Can be either.

Q37. Personnel (questionnaire) - Michigan based personnel required or given extra points?

A37. No.

Q38. Do sub-consultants need to complete the Environmental questionnaire?

A38. No.

APPENDIX 2

PROFESSIONAL'S PROPOSAL



Environmental Resources Group

28003 Center Oaks Court • Suite 106 • Wixom, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

January 10, 2023

Ms. Bridget Walsh
Department of Technology, Management and Budget
State Facilities Administration, Design and Construction Division

Re: Department of Technology, Management and Budget Proposal – 2023 ISID for Environmental Services, Various Locations, Michigan

Dear Ms. Walsh,

Environmental Resources Group, LLC. (ERG) is pleased to have the opportunity to respond to your Request for Proposal to provide professional environmental services for the above referenced contract.

We are confident you will find this proposal and our firm well suited to perform the requested environmental services under the 2023 ISID Environmental Services contract. We are thoroughly familiar with environmental regulatory requirements and contractual procedures of Department of Environment, Great Lakes, and Energy and Department of Technology, Management and Budget (DTMB). ERG currently holds an ISID contract for the 2019 Environmental ISID, 2022 Tank and Soil Removal ISID, and 2022 Environmental Expanded Triage ISID Services contract assignments.

The Certification of a Michigan Based Business and Responsibility Certification forms are attached.

ERG acknowledges receipt of Addenda No. 1 dated December 7, 2022, and Addenda No. 2 dated December 21, 2022.

Your time and effort associated with review of our professional qualifications and services are sincerely appreciated. Please contact the undersigned if there are any questions. ERG is fully committed to providing high-quality environmental services under this contract and we look forward to an opportunity to serve the DTMB and State of Michigan.

Respectfully submitted,

Robert T. Reichenbach, C.P.G.
President
Attachments



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Certification of a Michigan Based Business

(Information Required Prior to Contract Award for Application
of State Preference/Reciprocity Provisions)

To qualify as a Michigan business:

Vendor must have, during the 12 months immediately preceding this bid deadline:
or

If the business is newly established, for the period the business has been in existence, it has:

(Check all that apply):

- ☒ Filed a Michigan single business tax return showing a portion, or all the income tax base allocated or apportioned to the State of Michigan pursuant to the Michigan Single Business Tax Act, 1975 PA 228, MCL • 208.1 – 208.145; or
- ☒ Filed a Michigan income tax return showing income generated in or attributed to the State of Michigan; or
- ☐ Withheld Michigan income tax from compensation paid to the bidder's owners and remitted the tax to the Department of Treasury; or

I certify that I **have personal knowledge** of such filing or withholding, that it was more than a nominal filing for the purpose of gaining the status of a Michigan business, and that it indicates a significant business presence in the state, considering the size of the business and the nature of its activities.

I authorize the Michigan Department of Treasury to verify that the business has or has not met the criteria for a Michigan business indicated above and to disclose the verifying information to the procuring agency.

Bidder shall also indicate one of the following:

- ☒ Bidder qualifies as a Michigan business (provide zip code: 48393)
- ☐ Bidder does not qualify as a Michigan business (provide name of State: _____).
- ☐ Principal place of business is outside the State of Michigan, however service/commodity provided by a location within the State of Michigan (provide zip code: _____)

R 08/20



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Bidder: Environmental Resources Group, LLC

Robert T. Reichenbach

Authorized Agent Name (print or type)

Robert T. Reichenbach

01/10/2023

Authorized Agent Signature & Date

Fraudulent Certification as a Michigan business is prohibited by MCL 18.1268 § 268. A BUSINESS THAT PURPOSELY OR WILLFULLY SUBMITS A FALSE CERTIFICATION THAT IT IS A MICHIGAN BUSINESS OR FALSELY INDICATES THE STATE IN WHICH IT HAS ITS PRINCIPAL PLACE OF BUSINESS IS GUILTY OF A FELONY, PUNISHABLE BY A FINE OF NOT LESS THAN \$25,000 and subject to debarment under MCL 18.264.



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Responsibility Certification

The bidder certifies to the best of its knowledge and belief that, within the past three (3) years, the bidder, an officer of the bidder, or an owner of a 25% or greater interest in the bidder:

- (a) Has not been convicted of a criminal offense incident to the application for or performance of a contract or subcontract with the State of Michigan or any of its agencies, authorities, boards, commissions, or departments.
- (b) Has not had a felony conviction in any state (including the State of Michigan).
- (c) Has not been convicted of a criminal offense which negatively reflects on the bidder's business integrity, including but not limited to, embezzlement, theft, forgery, bribery, falsification, or destruction of records, receiving stolen property, negligent misrepresentation, price-fixing, bid rigging, or a violation of state or federal anti-trust statutes.
- (d) Has not had a loss or suspension of a license or the right to do business or practice a profession, the loss or suspension of which indicates dishonesty, a lack of integrity, or a failure or refusal to perform in accordance with the ethical standards of the business or profession in question.
- (e) Has not been terminated for cause by the Owner.
- (f) Has not failed to pay any federal, state, or local taxes.
- (g) Has not failed to comply with all requirements for foreign corporations.
- (h) Has not been debarred from participation in the bid process pursuant to Section 264 of 1984 PA 431, as amended, MCL 18.1264, or debarred or suspended from consideration for award of contracts by any other State or any federal Agency.
- (i) Has not been convicted of a criminal offense or other violation of other state or federal law, as determined by a court of competent jurisdiction or an administrative proceeding, which in the opinion of DTMB indicates that the bidder is unable to perform responsibly or which reflects a lack of integrity that could negatively impact or reflect upon the State of Michigan, including but not limited to, any of the following offenses under or violations of:
 - i. The Natural Resources and Environmental Protection Act, 1994 PA 451, MCL 324.101 to 324.90106.
 - ii. A persistent and knowing violation of the Michigan Consumer Protection Act, 1976 PA 331, MCL 445.901 to 445.922.



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

- iii. 1965 PA 166, MCL 408.551 to 408.558 (law relating to prevailing wages on state projects) and a finding that the bidder failed to pay the wages and/or fringe benefits due within the period required.
 - iv. Repeated or flagrant violations of 1978 PA 390 MCL 408.471 to 408.490 (law relating to payment of wages and fringe benefits).
 - v. A willful or persistent violation of the Michigan Occupational Health and Safety Act, 1974, PA 154, MCL 408.10001 to 408.1094, including: a criminal conviction, repeated willful violations that are final orders, repeated violations that are final orders, and failure to abate notices that are final orders.
 - vi. A violation of federal or state civil rights, equal rights, or non-discrimination laws, rules, or regulations.
 - vii. Been found in contempt of court by a Federal Court of Appeals for failure to correct an unfair labor practice as prohibited by Section 8 of Chapter 372 of the National Labor Relations Act, 29 U. S. C. 158 (1980 PA 278, as amended, MCL 423.321 et seq).
- (j) Is NOT an Iran linked business as defined in MCL 129.312.

I understand that a false statement, misrepresentation, or concealment of material facts on this certification may be grounds for rejection of this proposal or termination of the award and may be grounds for debarment.

Bidder: Environmental Resources Group, LLC

Robert T. Reichenbach

Authorized Agent Name (print or type)

Robert T. Reichenbach 01/10/2023

Authorized Agent Signature & Date

☐ I am unable to certify to the above statements. My explanation is attached.



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

ACKNOWLEDGMENT OF ADDENDUMS

PSC acknowledges receipt of Addenda: No. 1 dated: 12/07/2022,

No. 2 dated: 12/21/2022 No. dated:



Environmental Resources Group

Assessment • Remediation • Compliance • Risk Management

PART I – TECHNICAL PROPOSAL

2023 ENVIRONMENTAL INDEFINITE SERVICES INDEFINITE DELIVERY

PROFESSIONAL ENVIRONMENTAL CONSULTING SERVICES

VARIOUS LOCATIONS, MICHIGAN

PREPARED FOR:

**DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
3111 W. ST. JOSEPH STREET
LANSING, MICHIGAN 48917**

PREPARED BY:

**ENVIRONMENTAL RESOURCES GROUP, LLC
28003 CENTER OAKS COURT, SUITE 106
WIXOM, MICHIGAN 48393**

ERG PROJECT NO.: 9800

JANUARY 11, 2023

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LIST OF ATTACHMENTS

- Attachment 1 Organizational Chart and Personnel Resumes
- Attachment 2 Progress Report and Field Activity Logs
- Attachment 3 Certificate of Michigan Based Business and Certificate of Responsibility
- Attachment 4 Questionnaire

1.0 GENERAL INFORMATION AND PROJECT TEAM

1.1 COMPANY HISTORY

Environmental Resources Group, LLC (ERG) is a Michigan based company that was established in 2009 to provide Environmental Consulting Services to a mix of public and private clients and has grown to over 50 employees by consistently providing quality services at a competitive price and offering a full complement of environmental services. ERG provides Michigan-based resources with unique capabilities to successfully and efficiently complete the work requirements set forth in a scope of work. Today, ERG's qualified staff of professionals offer a multi-disciplined, full range of in-house engineering, hydrogeologic, geophysical, and field services.

ERG has significant experience providing services to the Michigan Department of Technology, Management and Budget (DTMB), Michigan Department of Environment, Great Lakes, and Energy (EGLE), United States Department of Housing and Urban Development (US HUD), Michigan State Housing Development Authority (MSHDA), and Local Agencies for over 32 years. These projects have been funded by Level of Effort (LOE), Indefinite-Scope, Indefinite-Delivery (ISID) contracts, Refined Petroleum Fund, Clean Michigan Initiative, and American Recovery and Reinvestment Act.

1.2 BUSINESS ORGANIZATION

ERG's corporate office is in Wixom, Michigan. ERG's Michigan office locations are:

Corporate Office

28003 Center Oaks Court
Suite # 106
Wixom, Michigan 48393
248-773-7986
248-924-3108 Fax

Muskegon Office

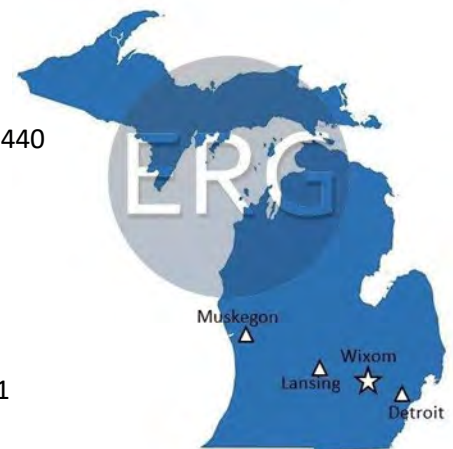
75 W. Walton Avenue
Suite C
Muskegon, Michigan 49440
231-747-8556
231-747-8558 Fax

Detroit Office

17800 Woodward Avenue
Suite # 100C
Detroit, Michigan 48203
313-949-3770
313-279-0519 Fax

Lansing Office

3125 Sovereign Drive
Suite B
Lansing, Michigan 48911
517-999-6020
248-924-3108 Fax



In addition, ERG has offices in Grand Junction, Colorado, and Clemson, South Carolina.

Toll Free: 888-589-1746. Website www.ERGrp.net.

ERG's SIGMA Vendor Code is CV0052614

ERG is a corporation registered in the State of Michigan. Federal ID # 45-4274942.

1.3 PROJECT MANAGERIAL TEAM

ERG will provide the Project Management function for each project. Mr. Robert T. Reichenbach, CPG, will serve as the Program Manager. His contact information follows:

Robert T. Reichenbach, CPG, President
28003 Center Oaks Court Suite # 106
Wixom, Michigan 48393
Telephone: 248-773-7986
Facsimile: 248-924-3108
Email: bob.reichenbach@ergrp.net

The Key Project Managers and office locations are as follows:

NAME	CONTACT INFORMATION	OFFICE ADDRESS & PHONE
Alfred Jordan, CPG	al.jordan@ergrp.net	75 W. Walton Avenue Suite C Muskegon, Michigan 49440 231-747-8556
Mike Marshall	mike.marshall@ergrp.net	75 W. Walton Avenue Suite C Muskegon, Michigan 49440 231-747-8556
Craig A. Savage, CPG	craig.savage@ergrp.net	28003 Center Oaks Court Suite # 106 Wixom, Michigan 48393 248-773-7986
Laura L. Lambert	laura.lambert@ergrp.net	28003 Center Oaks Court Suite # 106 Wixom, Michigan 48393 248-773-7986
Christina C. Schroeder	christina.schroeder@ergrp.net	28003 Center Oaks Court Suite # 106 Wixom, Michigan 48393 248-773-7986
Tim F. Hebert, C.P.G., P.G.	Tim.Hebert@ergrp.net	3125 Sovereign Drive Suite B Lansing, Michigan 48911 517-999-6020
Phillip Peterson	phillip.peterson@ergrp.net	3125 Sovereign Drive Suite B Lansing, Michigan 48911 517-999-6020
Mala Hettiarachchi, P.E.	Mala.hettiarachchi@ergrp.net	28003 Center Oaks Court Suite # 106 Wixom, Michigan 48393 248-773-7986

An Organizational Chart and resumes for the key professionals are included in Attachment 1. Additional ERG staff will be involved in the completion of the proposed scopes of work and achieving the desired goals, as needed.

1.4 ADDENDUM ACKNOWLEDGEMENT

ERG acknowledges receipt of Addenda No. 1 dated December 7, 2022, and Addenda No. 2 dated December 21, 2022.

2.0 UNDERSTANDING OF PROJECT TASKS

2.1 UNDERSTANDING THE PROJECT REQUIREMENTS

ERG understands that the State of Michigan DTMB is seeking qualified firms to assist EGLE with site assessments throughout Michigan, which have been identified by the Remediation and Redevelopment Division (RRD). The qualified firm may be required to perform applicable tasks which may include screening, investigation and/or remedial/corrective action for assigned contaminated and or hazardous waste sites through Michigan. The ultimate goal is to achieve closure in accordance with the applicable Part 201 or Part 213 of the National Resources and Environmental Protection Act (NREPA), Public Act (PA) 451 of 1994, as amended, and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (42 U.S.C. Chapter 103) and other relevant state and federal statutes and requirements.

ERG professionals have provided technical expertise, business insight and regulatory knowledge on thousands of environmentally contaminated sites in Michigan following the requirements of Parts 201 and 213 of the NREPA, 1994 PA 451 and CERCLA. ERG professionals have performed a variety of tasks on these projects, including but not limited to:

- Remedial Investigations (RI) to characterize the nature and extent of contamination, and to evaluate the potential risk to human health and the environment (Risk Assessments)
- Feasibility Studies (FS) to evaluate remedial action alternatives to select the best alternative technologies at the most economical cost
- Conceptual Site Models (CSM) to provide a written and/or illustrative representation of the physical, chemical and biological processes that control the transport, migration and actual/potential impacts of contamination in soil, air, groundwater, surface water and/or sediments to human and/or ecological receptors
- Engineering Design to prepare plans, specifications and contract documents that will be used to implement the selected interim response and/or remedial action alternative
- Construction Management (CM) to oversee the procured contractor on behalf of DTMB and contracting agency to ensure the work is completed as planned, within schedule and budget
- Natural Resources Damage Assessments to determine which natural resources may have been impacted by the release of hazardous substances and the estimated current and future economic and other losses
- Implementing database management, graphics capabilities, and survey tools to handle project information that can be imported into existing databases where it can be reviewed by DTMB and contracting agency staff
- Maintaining and implementing a Quality Assurance/Quality Control (QA/QC) program to ensure quality results
- Maintaining and implementing health and safety programs designed to train and monitor the personnel who will be working on sites of environmental contamination

Our professionals stay current on changes to the regulations and state of the art site characterization and remediation technologies by research, technical publication review, and attending and presenting at professional development programs/workshops. ERG fully understands the importance of the work being performed under this contract including: the project is completed on schedule, within budget, in accordance with industry standards; and the desired results are achieved.

2.1.1 ERG COMMITMENT TO CONTRACT SUCCESS

ERG fully understands the services required, and believe to achieve Contract success, communication between ERG and RRD personnel is critical. The ERG Project Managers will regularly communicate directly with district staff. The experienced ERG Project managers bring strong management skills, excellent listening skills, and outstanding technical expertise. ERG is comprised of key staff members who have been involved directly or indirectly in the former and current LOE and ISID Contracts and Environmental ISID Triage Contract programs. ERG has the capabilities to provide:

- Strong technical and managerial skills from individuals who are familiar with the current ISID contracting strategy, policies, and procedures. This lends itself to rapid start up and project assignment commencement for the 2023 Environmental ISID contracts.
- Proven high quality performance levels on past LOE and ISID assignments for the EGLE. This should give EGLE the assurance that selecting ERG will result in a highly competent consultant and one that will exceed the agencies' expectations.
- Extremely experienced Project Management and Support Staff are available to EGLE Project Managers to support the execution of the scope of work.

2.1.2 ERG'S ADMINISTRATIVE KNOWLEDGE

ERG will provide oversight, administrative duties and reporting on various aspects of the projects including pre-construction meetings, construction observation, pay item tracking, soil and material testing, and obtain final agency acceptance. Construction observation and administration shall be completed as required by DTMB and EGLE.

ERG will complete the required tasks and complete contract administration for DTMB and EGLE as necessary. As part of the contract administration, ERG will:

- Establish, maintain, and utilize a project documentation filing system
- Process subcontracts - add subcontractor(s) to the filing system and maintain associated documentation and items
- Import, review, and post Daily Field Reports (DFRs) and associated calculations/drawings
- Track materials (certification/testing) and material quantities
- Create required project performance, monitoring, and milestone reporting and monitoring records for submittal, as needed
- Process and maintain records for contract modifications and/or work orders
- Monitor project progress versus the planned schedule

- Track and maintain status of miscellaneous submittals and Requests for Information

2.1.3 ERG'S TECHNICAL KNOWLEDGE - SCOPE OF SERVICES

Our senior professionals have an extensive record in managing small and large environmental contracts for both private and public-sector clients. Our professionals have been providing our clients with a full range of CM, RI, FS, risk-based-corrective-actions (RBCA) and expert testimony. Our capabilities match very well with the items outlined in the Scope of Work provided.

1. ASBESTOS/LEAD/MOLD/BIOHAZARD/FREE PRODUCT/REGULATED WASTE SURVEY/ABATEMENT

ERG has certified asbestos, lead and hazardous material specialists that can provide sampling and assessment services associated with these regulated materials and can identify their presence early in a project and explain their potential cost and scheduling implications. These surveys typically include a visual assessment of the building, its contents, the materials and condition of any suspect or regulated materials identified.

ERG professionals have completed hazardous waste inventories and sampling of potentially hazardous materials and containers, including waste piles, drums, USTs and ASTs. Our team manages and coordinates appropriate transport and disposal of the materials.

2. BROWNFIELD DEVELOPMENT

Environmental Resources Group's diverse team of experts allows us to offer a complete list of services to municipalities, developers, attorneys, lenders and commercial/industrial clients seeking to restore Brownfield sites in their communities. We offer experience in all aspects of brownfield redevelopment including BRA program management and policy development, and creation of Brownfield Plans and Act 381 Workplans, etc.

3. ENVIRONMENTAL INVESTIGATION/CHARACTERIZATION/PILOT TESTS/FEASIBILITY STUDIES

ERG realizes that site investigations can become very costly if not conducted in a targeted manner, considering site characteristics, contaminants of concern, and affected media. We complete soil and groundwater assessments as part of a cost effective plan to determine the extent of impact, identify migration pathways, and develop a conceptual site model. This allows us to evaluate feasible remedial approaches and develop site specific remedial alternatives. ERG has completed comprehensive investigations for hundreds of commercial and industrial properties, using the most modern and innovative investigation methodologies.

ERG evaluates disposal and remedial alternatives of environmentally contaminated media where necessary. ERG engineers assess various options and media, to determine the most cost-and technologically feasible alternative to meet disposal/remedial objectives.

ERG professionals have successfully implemented in-situ bio-remediation, and in-situ chemical oxidation systems among other remedies at environmentally impacted sites. Standard tasks performed by our

technicians include filter system media change-outs, carbon change-outs, air stripper media/tray cleaning, pump maintenance/cleaning, recovery well cleaning, component replacement, blower maintenance, data collection, sample collection, and system performance monitoring.

4. ENVIRONMENTAL/ROTONSONIC DRILLING/WELL ABANDONMENT

ERG has installed hundreds of environmental soil borings and monitoring wells utilizing nearly all methodologies available. We have used Geoprobe (direct-push), hollow-stem auger, rotonsonic, and other types of drilling rigs, depending on the expected lithology, and desired outcomes of the investigation. Upon completion of well use, ERG abandons wells in accordance with all applicable laws, regulations and industry standard practices.

5. GROUND PENETRATING RADAR/LASER INDUCED FLUORESCENCE FIELD SCREENING

ERG staff has provided geophysical investigations to a wide variety of clients. ERG owns and operates ground penetrating radar (GPR) equipment for a variety of environmental and engineering applications. Our clients have included governmental agencies, consulting firms and private clients for projects ranging from utility detection and mapping to environmental assessment and geologic mapping.

ERG has also completed numerous NAPL/DNAPL investigations and are very experienced with the use of LIF-UVOST as a delineation tool.

6. LANDFILL MAINTENANCE/MONITORING

Environmental Resources Group has experts with specialized knowledge in dealing with the physical and chemical aspects of landfill leachate and methane control issues. ERG develops strategies designed to reduce costs while maintaining effective leachate and LFG management and monitoring. ERG has expertise and experience in landfill groundwater monitoring, soil gas and methane monitoring, methane collection system design, operation, and monitoring, leachate collection system design, operation, and monitoring, post closure monitoring plans, operation and maintenance plans, and PFAS minimization and treatment technologies

7. PER- & POLYFLUOROALKYL SUBSTANCES (PFAS) SAMPLING/MITIGATION/REMEDATION

Stringent and evolving regulations have created challenging conditions for the sampling and remediation of Per- and Polyfluoroalkyl Substances (PFAS). ERG's environmental professionals offer the experience necessary, along with excellent quality assurance and control, to effectively manage PFAS issues. The remediation of PFAS in water or soil requires state-of-the-art technology, or in many cases, a combination of new and existing technologies. Effective remediation techniques include: Adsorption, Ion Exchange Resins, Membrane Filtration, Thermal Treatments and Stabilization or Immobilization. ERG has completed several PFAS investigations at commercial and industrial properties and has been providing design services to remove PFAS in landfill leachate.

8. PHASE I/PHASE II /BASELINE ENVIRONMENTAL ASSESSMENTS AND HYDROGEOLOGICAL INVESTIGATIONS, VAPOR INTRUSION TO INDOOR AIR ASSESSMENTS

ERG has conducted numerous ESAs and BEAs in compliance with the ASTM Standards and the EPA's "All Appropriate Inquiries" and Section 20104 of 1994 Michigan Public Act 451, respectively; for banking, property development, manufacturing and the commercial sector clients. ERG has conducted numerous Phase II ESAs and hydrogeologic investigations at sites throughout Michigan. We completed soil sampling, groundwater sampling, air sampling, and hydrologic testing at properties with consolidated (bedrock) and unconsolidated soils. We are thoroughly familiar with all aspects of soil boring and well installation methods.

Additionally, ERG has completed numerous vapor intrusion to indoor air assessments and is very familiar with the EGLE protocols for these types of investigations.

9. REMEDIATION SYSTEMS DESIGN/CONSTRUCTION OVERSIGHT/O&M/DECOMMISSIONING

ERG professionals have developed a wide variety of remedial designs that, upon implementation, have achieved effective remediation of impacted soil, groundwater, vapors and other media. ERG utilizes cost effective, innovative technologies designed to achieve site specific clean-up objectives. With our current and past contracts with the State of MI, ERG engineers have developed plans, drawings, and specifications for soil and groundwater remediation and removal and disposal of waste piles. The specifications were used to obtain competitive bids from trade contractors for various types of projects. ERG evaluates the responsible bids for content and cost. Following the evaluation, ERG recommends the selected Trade Contractor to the EGLE Project Manager for award of the contract.

ERG personnel are experienced in the O&M of a variety of remedial technologies. ERG personnel have O&M experience with NAPL recovery, Air Sparge/Soil Vapor Extraction (activated carbon, catalytic oxidation), groundwater pump and treat systems using activated carbon, air stripping, oil/water separating units, biological treatment, and filtration.

10. UNDERGROUND/ABOVEGROUND STORAGE TANK REMOVAL/DEMOLITION/SOIL EXCAVATION/CLOSURE

ERG provides full UST and AST removal and closure services. Our experienced staff has provided and coordinated all permitting, equipment, product removal and disposal, environmental sampling, and the preparation of all required forms, reports and submittals mandated by the State. Additionally, we have prepared and implemented numerous post UST/AST closure activities utilizing various soil and groundwater remediation technologies.

Through continuous use and verification of the QA/QC process and project management tools, our Project Managers utilize milestone quality control and project status updates to provide DTMB and contracting agency with quality plans and specifications that minimize/control field change orders during construction. Construction observation and administration shall be completed as required by the DTMB and contracting agency.

11. VAPOR INTRUSION ASSESSMENTS/RISK MITIGATION/DESIGN/INSTALLATION/O&M SERVICES

ERG has completed numerous vapor intrusion to indoor air assessments and is very familiar with the EGLE protocols for these types of investigations. ERG has designed and installed several Vapor Mitigation systems at former dry cleaning and other operations where Vapor Intrusion was occurring. Our experienced staff provided the installation and O&M for these systems. We are experienced with passive and active mitigation systems.

2.2 PROVIDING SERVICES REQUIRED AND BEST VALUE

We are confident that the ERG team of professionals we have assembled is of the highest quality. ERG has consistently demonstrated that we will excel in all aspects of the services provided on these projects. ERG will strive to provide value added solutions to the EGLE, just as we do with all our clients. ERG will promote the use of sustainable practices during the investigation, construction, remediation, redevelopment, and monitoring of environmental cleanup sites, with the objective of balancing economic viability, conservation of natural resources and biodiversity, and the enhancement of the quality of life in surrounding communities.

Our philosophy of moderate overhead and operating costs, combined with the vast experience and technical capabilities of our personnel, makes ERG one of the best values for these services. ERG is committed to making an impact beyond our projects by showing a responsibility to the community, respect for the environment and fiscal responsibility to the State of Michigan taxpayers.

3.0 PERSONNEL

3.1 ALL PERSONNEL BY CLASSIFICATION WHO WILL BE EMPLOYED ON THE PROJECT

The ERG staff identified below will be involved in the completion of the proposed scopes of work and achieving the desired goals. The Organizational Chart and Resumes for the key personnel are included in Attachment 1.

Classification	Name/Registration	Role (Assignment)	Education	Yrs. Exp.
P4	<i>Robert Reichenbach*</i>	Program Manager/ Contract Administrator	BS, Geology, 1985	37
P4	<i>Robert Zwald, CPG</i>	Project Manager	BS, Geology, 1983	34
P4	<i>Alfred J. Jordan, CPG*</i>	Senior Project Manager	BS, Geology, 1984	38
P4	<i>Gus George, PE</i>	Senior Project Manager	BS, Petroleum & Minerals Engineering, 1976	46
P4	<i>Timothy Hebert, CPG*</i>	Senior Project Manager QA/QC Manager	BS, Geology, 1984	38
P4	<i>Mala C. Hettiarachchi, PhD, PE*</i>	Environmental Engineer	PhD, Environmental Engineering, 2005	24
P4	<i>Matthew J. Germane, PE</i>	Environmental Engineer	BS, Environmental Science Engineering, 1983	39
P3	<i>Michael Marshall*</i>	Project Manager	BS, Fisheries & Wildlife, 1992	31
P3	<i>Robert Elliot</i>	Senior Project Manager	BS, Environmental Science/Geology, 1992	31
P3	<i>Phillip Peterson*</i>	Senior Project Manager	BS, Geology, 1987	35
P3	<i>Linda Hensel</i>	Senior Project Manager	BS, Geological Engineering, 1980	42
P3	<i>Laura Lambert*</i>	Senior Geologist	BS, Geology, 2002	20
P3	<i>Keith Christofferson</i>	Senior Project Manager	BS, Environmental Studies & Applications, 2005	17
P3	<i>Jeffrey Berntsen</i>	Senior Project Manager	BS, Geology, 1990	30
P3	<i>Donald Klingler</i>	Senior Project Manager	BS, Geological Engineering, 1982	40
P3	<i>Craig Savage, CPG*</i>	Senior Project Manager	MS, Geology, 1984	38
P3	<i>John Rabideau, CPG</i>	Senior Project Manager	BS, Geology and Business Management, 1987	35
P3	<i>Christina Schroeder*</i>	Project Manager	BS, Earth Science/Geology, 2013	10
P3	<i>Charles Badgerow</i>	Senior Geologist	BS, Geologist, 2013	9
P2	<i>Taylor Vergin</i>	Staff Engineer	BS, Geology, 2016	7

Classification	Name/Registration	Role (Assignment)	Education	Yrs. Exp.
P2	<i>Justin Collinash</i>	Senior Environmental Scientist	BS, Environmental Science, 2012	10
P2	<i>Gabrielle LaFayette</i>	Staff Geologist	MS, Earth Sciences, 2019	3
P2	<i>Erik Eikey</i>	Staff Geologist	BS, Geology, 2020	2
P2	<i>Lindsey Stone</i>	Project Geologist	BS, Geology, 2019	3
P2	<i>Kaleb Schetter</i>	Staff Geologist	BS, Environmental Science, 2020	2
P2	<i>Jacqueline Freiberg</i>	Staff Geologist/ Project Manager	BS, Geology, 2016	6
P2	<i>Kristin Peterson</i>	Industrial Hygienist	BS, Environmental Studies & Applications, 1995	27
P1	<i>Sarah Zrull</i>	Field Geologist	BS, Environmental Science, 2022	1
P1	<i>Lance Crenno</i>	Field Geologist	BS, Environmental Science, 2020	2
P1	<i>Jacob Henning</i>	Staff Engineer	BS, Environmental Engineering, 2020	2
P1	<i>Hannah Kamper</i>	Field Geologist	BS, Environmental Science, 2021	1
P1	<i>Evan Monteith</i>	Field Scientist/GIS	BS, Geographic Information Sciences, 2022	1
P1	<i>Evan Sutherland</i>	Field Geologist	College Student	1
T3	<i>David Yost</i>	Senior Technical/ Geologist	BS, Geology, 1975	45
T3	<i>Benjamin Jordan</i>	Senior Technician	College Student	9
T2	<i>Alan Reichenbach</i>	Field Technician	HS Diploma	5
T1	<i>Lauren Wallace</i>	Field Technician	College Student	1
T1	<i>Holly Grow</i>	Field Technician	College Student	1
T1	<i>Josh Jordan</i>	Field Technician	College Student	1
T1	<i>Kaila Schwanitz</i>	Lab Technician	BS, Geology, 2020	3
TS	<i>Kylie Kutney</i>	Administrative	College Student	12
TS	<i>Catlin Sather</i>	Administrative	BA, Marketing, 2021	2
TS	<i>Rebecca Bloom</i>	Administrative Administrative QA/QC Coordinator	BS, Business Administrative, Finance, 1991,	32
TS	<i>Barbara Billings</i>	Administrative Administrative QA/QC Coordinator	HS Diploma	29
TS	<i>Kristine Smith</i>	Administrative	HS Diploma	17

Classification	Name/Registration	Role (Assignment)	Education	Yrs. Exp.
TS	<i>Christina Gergis</i>	Administrative	BA, Business Management, 2004	18
TS	<i>Amy Mazzaresse</i>	Administrative	BS, Family Consumer Science, 1993	30

* Key Project Personnel

3.2 SUBCONTRACTED SERVICES

ERG recognizes the importance of teaming with other experienced professionals to perform environmental services, including geophysical surveys, land survey, and waste management. ERG will subcontract with specialty firms to assist in meeting the project goals. ERG will competitively bid a minimum of three (3) contractors (excavation, drilling, surveying, etc.) to perform services required for project execution, and will be required to meet ERG's health and safety requirements.

4.0 MANAGEMENT SUMMARY, WORK PLAN, AND SCHEDULE

It is our understanding that the scope of services in this RFP involves providing the State of Michigan with professional environmental services to investigate, evaluate, design, and supervise the implementation of abatements/remedies at assigned sites of contamination under Parts 201 and 213 of the Michigan Natural Resources and Environmental Protection Act (NREPA), 1994 P.A. 451.

ERG's management approach is based on the philosophy that the proposed team is an accountable, functional, and in-depth extension of our client, and will remain a supporting partner throughout the project's duration. The entire ERG Team, including Contract Administrator, Project Manager, and field oversight staff, will work closely with DTMB/EGLE to set goals, exchange information, identify potential problems, propose effective solutions, develop responsive schedules, assure resource availability, comply with federal and state requirements, work within budget, and share ideas on innovative and cost-effective means to support the project.

Mr. Robert Reichenbach, CPG, will act as Contract Administrator. For each site, he will assign a project manager. The ERG Project Manager (PM) will be responsible for executing the project scope, to meet the project objectives and expectations of DTMB. ERG's PM will regularly update the Agency PM on project activities/progress. ERG's PM will be responsible for identifying any project issues, bringing them to the attention of the Agency PM and identify possible resolutions for discussion. Mr. Reichenbach will monitor all aspects of the project and will confer regularly with the project manager. He will monitor ERG's performance to assure that project objectives are being met and quality is being maintained.

4.1 PROJECT WORK PLANS

The DTMB Contract for Environmental Engineering and Remedial Design Services may include any combination of the following phases:

- Phase 100 – Environmental Investigation/Study Services
- Phase 300 – Schematic/Design Development
- Phase 400 – Preliminary Design
- Phase 500 – Final Design
- Phase 600 – Construction Administration (Office Services)
- Phase 700 – Construction Administration (Field Services)
- Phase 900 – Operation and Maintenance Management (Remediation Facility)

The most commonly used phases for environmental projects include Phase 100, Phase 400, Phase 500, Phase 600, and Phase 700. A site-specific work plan will be developed when requested by the contracting agency which will achieve the specific project objectives per the contracting agency's Scope of Work.

Upon award if a project, a completed DTMB-410 form will accompany the site-specific work plan describing each phase selected for that project. The form will include:

1. A list of the selected phases with a detailed description of the services to be provided for each specific phase.
2. A list of the individuals that will be working on the project, their title or classification, and compensation.
3. A total fee per phase of the project with a sum total not to exceed.
4. Individual phase budget detail worksheets describing individual title or classification, number of work hours for that phase, compensation, reimbursable amounts for other direct costs (i.e. drilling, survey, sampling equipment, laboratory fees) and total not to exceed per phase.

A generic work plan for these projects details the activities, tasks, and resources required and allocated for each objective in the Scope of Work. A schedule is included for the project objectives, milestones, tasks, and activities. A total cost estimate is provided with the work plan that provides labor, other direct costs, and subcontractor costs for each project phase listed. It is very important that the work plan be provided in both a timely manner and be approvable by the contracting agency with a minimum number of drafts.

4.2 PROJECT DELIVERABLES

The following deliverables and project reports are generally submitted to the contracting agency for review on similar projects:

1. Preliminary Budget – Prepare a preliminary budget specifying a total estimated cost for the scope of work, broken down into an estimated cost for each listed objective.
2. Health and Safety Plan – Prepare a Health and Safety Plan to address the site-specific concerns for the site and scope of work, in accordance with 29 CFR 1910.120 and Section 24 of Act 154 PA 1974, as amended, and all federal, state and local regulations.
3. Work Plan – As described above.
4. Progress Reports - Progress reports are submitted as required by the contracting agency. The progress reports include at a minimum the following:
 - Work accomplished during the reporting period including basis for significant decisions
 - Daily field forms/notes
 - Weekly Field Summary Reports
 - Work to be accomplished during the subsequent reporting period
 - Problems, real or anticipated, that should be brought to the attention of the contracting agency
 - Notification of any significant deviation from the agreed upon work plan
 - Cash flow showing budget, current expenses, and budget deviations for each major task
5. Final Report – ERG will submit one electronic copy to the EGLE project manager as required by the contracting agency. The report will include at a minimum the following:
 - Chronological site activities

- Site conditions encountered before, during, and after investigation activities
- Daily field reports, including field sketches and boring logs
- Site photographs, including before work is initiated, during on-site activities (when safely feasible), and after completion of site restoration
- Site Figures in both PDF and Shapefile formats, including Site Location Map, and Site Map identifying site features and known utilities, and an Analytical Map depicting all sample locations and analytical results with exceedances highlighted and identified
- Comparison summary tables of analytical data, laboratory reports, and COCs
- Digitized soil boring logs
- Coordinates of all borings in Michigan GeoRef
- GPR Survey results (if conducted)
- LIF-UVOST logs, with photo documentation (if conducted)
- Groundwater monitoring well, soil-gas, and sub-slab abandonment records
- Landfill waste approvals, disposal documentation/manifests
- Survey Map and legal property sealed by licensed surveyor (if conducted)
- Landfill waste approvals
- Waste manifests and landfill receipts for soil/groundwater disposal
- Density testing results
- Other construction testing results (sieve analysis, compaction, density)

Copies of the field reporting forms, and progress reports are provided in Attachment 2.

The reports are provided in draft form for contracting agency review with exception of the Progress Reports. One complete copy of the draft document is provided. The draft documents will be submitted by email, and will contain the entire document, including text, figures, tables, and appendices. The requested number of hard copies of the final document will be submitted and an electronic version of the final document shall also be provided.

ERG will complete the project close-out and obtain contracting agency approval of required files, material certifications, certified payrolls, pay estimates, and other required documentation. Functions and activities of this task include:

- Resolving outstanding disputes and issues relative to pay item quantities and materials documentation
- Prepare, review, and balance final pay item quantities
- Prepare final contract modifications
- Provide complete project documentation and files, specifically as they relate to correspondence, meeting minutes, submittals, contract modifications, work orders, material certifications, test reports, certified payrolls, and interim progress estimates
- Prepare the subcontractor's evaluation report
- Facilitate the contracting agency's project record review
- Generate and process the final estimate package

- Coordinate submittal of project files and “as-built” plans

4.3 CONSTRUCTABILITY REVIEW

ERG has the capability and experience to perform constructability and value engineering reviews. The reviews are conducted by a senior engineer, and include an evaluation of details, references, notes, sections, and specifications to confirm consistency of the Bid Documents and identify any omissions, and to eliminate coordination problems prior to the start of construction. The reviews evaluate the proposed bid items for completeness and evaluate whether standard means and methods can be used to complete the work. The purpose of the value engineering review is to identify potential construction problem areas and possible cost savings, remove conflicts between plans and specifications, identify potential means to expedite construction, and evaluate alternative methodologies.

4.4 QUALITY CONTROL PLAN

ERG has an established program for project Quality Control/Quality Assurance (QA/QC) that is incorporated into the project management processes. Our primary means of building quality into every phase of each project is through the use of assigned senior technical reviewers and periodic QA reviews at the program level.

ERG maintains Standard Operating Procedures (SOPs) and QA/QC for all aspects of a project including sampling plans, Health and Safety Plans, data analysis, data management, waste management, and reporting. In all instances, where applicable, field work is conducted in accordance with current ASTM, EGLE, and EPA Guidelines. Data collection and analyses are conducted under applicable and required standards.

ERG will assign Mr. Tim Hebert as the QA/QC Officer, who is independent of program and project management, and is responsible for monitoring work, procedures, and documentation; identifying quality problems for key management; initiating, recommending, and/or providing solutions to quality problems; and assuring implementation of corrective action. Mr. Hebert has the authority to direct removal and replacement of any substandard work. The following is an overview of ERG’s QA/QC Program. Mr. Reichenbach will serve as QA/QC Officer for projects managed by Mr. Hebert.

- The QA/QC Officer, independent of the program, has freedom to monitor work, procedures, and documentation; to identify problems; and authority to develop corrective actions, verify their implementation, and stop work
- Programs to orient and train personnel in implementation of the corporate and contract-specific QA/QC program
- Development of project-specific design quality assurance project plans (QAPPs) focusing on the unique needs of environmental projects. This includes a QC system for coordination of plans and minimization of errors and omissions in deliverable products.
- Identification of senior technical reviewers who meet qualifications requirements for the necessary training, experience, and skills to provide peer review for each technical service area

- Periodic audits of each engineering or scientific program, technical service area, and/or regional operation to ensure compliance with QA/QC program requirements
- Assigned QA/QC responsibilities for sub-consultants
- A system of checks and balances within the organization requiring appropriate authorized signature authority and adhering to a structured chain of command at all levels of management
- A comprehensive Contracts Policy and Procedures Manual that establishes a controlled system for the handling, documentation, revision, review, and sign-off procedures for all contracts

4.4.1 PROCESS FOR CHECKING AND VERIFYING STUDIES FOR CLARITY AND COMPLETENESS, PLANS AND SPECIFICATIONS FOR ERRORS, OMISSIONS AND QUALITY

All project team members are expected to contribute to the overall quality of a project. All data, deliverables, documentation, etc. will, at a minimum, be peer reviewed for completeness and accuracy. Deliverables, such as work plans and reports, will be reviewed by the project manager, senior technical personnel (as appropriate), and the QA/QC Officer.

4.4.2 DOCUMENTING DESIGN DECISIONS

As part of ERG's commitment to providing quality services, we have an established quality management philosophy. The cornerstone of this philosophy is thorough documentation of design information and decisions. ERG utilizes well-established procedures for documenting design reports which record design methodology, design decisions, meeting minutes, review comments and other communication.

4.4.3 INCORPORATING AND TRACKING REVIEW COMMENTS

The key to successful project control is diligent tracking and acknowledgement of clients' review comments and concerns. ERG maintains records of client review comments for each deliverable to track and ensure each comment is addressed with the submittal of the final document.

4.5 BUDGET ANALYSIS

ERG has project accounting software that allows us to continually manage budgets in real-time, including professional services, expenses, and subcontractors. ERG will review proposed subcontractor budgets to ensure that it is adequate for the projected goal and costs are in line. ERG solicits a minimum of three (3) competitive bids for subcontractor services. If it is determined that the budget is inadequate or not responsive, ERG will provide technical and practical reasons for the inadequacies.

4.6 SCHEDULE

For each assignment, ERG will prepare a detailed project schedule to encompass the duration of the project. The schedule will be maintained and updated in consult with the EGLE Project Manager as the work progresses.

4.7 NOTICE OF ON-SITE WORK ACTIVITY

ERG will submit a Notice of On-site Activity (NOA) through the RIDE website and the EGLE Project Manager with at least 14 days' notice prior to conducting any on-site work activity.

4.8 INVOICING

Invoices will be submitted monthly for all completed site work during that month.

5.0 REFERENCES

City of Muskegon

Mr. Frank Peterson, City Manager 231-724-6724

Former Gus's Mini Mart

44974 Gratiot Avenue

Clinton Township, Michigan

Ms. Kim Ethridge, EGLE 586-324-0183

UST and Soil Removal Triage Projects

Kalamazoo District

Mr. Steve Beukema, EGLE 269-567-3513

Lansing District

Mr. Paul Bucholtz, EGLE 517-243-7574

Jackson District

Mr. Ray Govus, EGLE 517-290-9074

SE District

Mr. Erik Gurshaw, EGLE 586-291-3418

Closed Waterford Hills Landfill

Waterford, Michigan

Ms. Collen McLean, EGLE 586-554.6489

Four Corners Square

1451 Union Lake Road

8152 and 8198 Cooley Lake Road

White Lake Twp., Michigan

Mr. Shakir W. Alkhafaji, Veritas Unlimited 248-351-8800

Hantz Farms

Detroit, Michigan

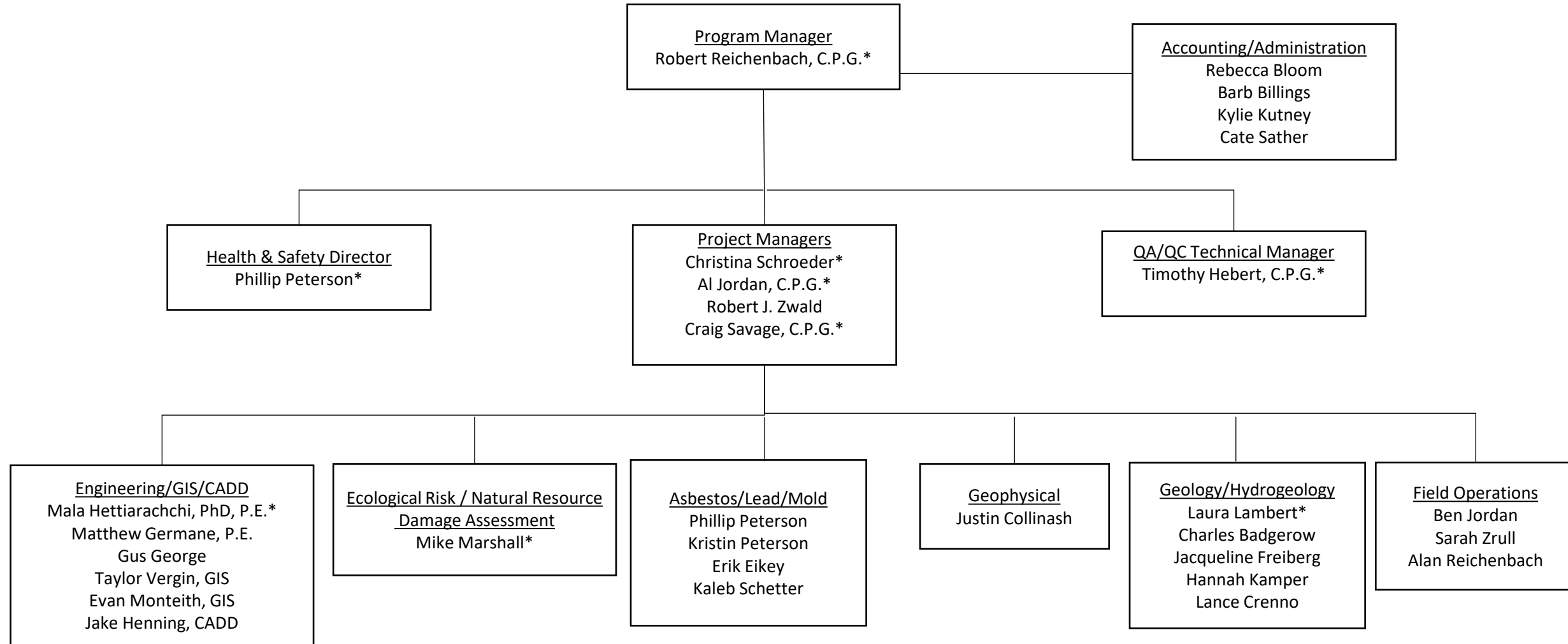
Mr. Mike Score, Hantz Farms, 313-893-1937

ATTACHMENT 1

ORGANIZATIONAL CHART AND PERSONNEL RESUMES



Environmental Resources Group, LLC





TIMOTHY F. HEBERT
SENIOR PROJECT MANAGER
SENIOR GEOLOGIST

EDUCATION

B.S., Geology—University of Akron, 1984
B.S., Biology—University of Akron, 1984

CERTIFICATIONS

Professional Geologist, Kentucky No. 145
Professional Geologist, Pennsylvania No. PG001200G
Professional Geologist, Wisconsin No. 1131
AIPG Certified Professional Geology, CPG No. 8297
Certified Underground Storage Tank Professional, Michigan No. 23

PROFESSIONAL EDUCATION COURSES

Sampling Strategies and Statistics Training for Part 201 Cleanup Criteria, Michigan Department of Environmental Quality
OSHA 40-Hour Hazardous Waste and Emergency Response (HAZWOPER) Training
OSHA 8-Hour HAZWOPER Annual Refresher Training
ASTM Risk-Based Corrective Action Training

PROFESSIONAL EXPERIENCE

ENVIRONMENTAL DUE DILIGENCE & DUE CARE, UNDERGROUND STORAGE TANK COMPLIANCE MANAGEMENT PROGRAMS, SOIL & GROUNDWATER REMEDIAL INVESTIGATION/FEASIBILITY STUDIES, CONCEPTUAL REMEDIAL SYSTEM DESIGN, WASTE MANAGEMENT, CONSTRUCTION/DEMOLITION OVERSIGHT & MANAGEMENT

Mr. Hebert is a Certified/Registered Professional Geologist with more than 39 years of experience performing environmental due diligence/due care assessments and comprehensive remedial investigations involving hazardous substances and petroleum contaminants throughout Michigan, Ohio, Pennsylvania, Indiana, Illinois, Kentucky, West Virginia, North Dakota, Wisconsin, New York, and Missouri. Mr. Hebert has extensive field and project management expertise relevant to the non-aqueous phase liquid (NAPL) risk-based remedial/corrective action. He has a long-standing relationship with Michigan's Department of Technology, Management and Budget (DTMB), Department of Environment, Great Lakes, and Energy (EGLE), and Department of Military and Veterans Affairs (DMVA). Mr. Hebert formerly served as ECT's Program Director/Principal-in-Charge with respect to its State of Michigan Level of Effort and Indefinite-Scope/Indefinite-Delivery contract programs. These state-funded programs not only require a high level of proficiency in administrative/project management, but also warrant a multi-discipline technical knowledge pursuant to contaminant behavior/conceptual remedial design, universal/regulated waste management, and construction/demolition oversight and management. Mr. Hebert is proficient in the rules and guidelines associated with environmental due diligence and the Michigan Underground Storage Tank Cleanup Fund administered through the Michigan Underground Storage Tank Authority (MUSTA) and formerly served as the Office Manager for ECT's Lansing, Michigan office.

Former Director/Principal-in-Charge; State of Michigan Level of Effort and Indefinite-Scope/Indefinite-Delivery Discretionary Contracts—Provided technical and administrative management and oversight regarding the due diligence strategies and the development of work plans and design specifications for various projects involving the implementation of Phase I environmental due diligence/due care practices, remedial site assessment/characterization activities, NAPL recovery, affected groundwater treatment and the operation and maintenance of onsite systems, scheduling/implementation of groundwater monitoring, volatilization indoor air pathway programs, and the construction of engineered facility improvements. Provided direct oversight on the preparation of project-related technical and contract procurement documents related to:

- Department of Military and Veterans Affairs—Camp Grayling Water/Pavement Projects
- Department of Military and Veterans Affairs—Michigan Army National Guard Maintenance & Training Facilities Oil/Water Separator Cleanout Program (2011 – May 2020)
- Department of Military and Veterans Affairs—Michigan Army National Guard Maintenance & Training Facilities Armory Manager Environmental Awareness Guide (2016 – May 2020)
- EGLE-Remediation and Redevelopment Division (EGLE-RRD)—
 - Vivie’s Florist facility
 - Former Kinneville Gas Station facility
 - Former Action Auto #30 facility
 - Alcott Dam Removal
 - Rose Harbor Marina facility
 - Dean St. Residential RI
 - Westphalia Oil Co. facility
 - Walkerville Family Mart facility
 - City of Davison/Independence Oil facility
 - Former Fairbanks Oil facility
 - City of Flint/Fleet Admin. - 12th Street Yard facility
 - Mobile Graham Road facility
 - Clark Road facility
 - Saginaw Bay Reef Restoration
 - Bob’s Marathon RI/Decommissioning
 - Central Distributors facility
 - Americhem Corp. facility (North/South Plumes & NAPL Pilot Study)
 - North 34th Street facility
 - Total #2542/Huron Mini Mart facility
 - Spartan Express facility
 - Great Northern Packaging facility
 - Action Auto #10 facility
 - Fred’s Country Sunoco facility
 - Michigan Center 213 facility
 - Gene Carr facility
 - S & S Shell facility
 - Evelyn Gibbons facility
 - Jimmie’s Filling Station facility
 - Bay Petroleum Corporation facility
 - Clark Station No. 767 facility
 - Tabor Oil facility

- Odyssey House facility
- Anmas Incorporated facility
- King's Service facility
- Corner Enterprises, Inc. facility
- Maeward, Inc. facility
- Linden/Bridge Street Benzene Contamination
- Nye's Shell facility
- Cheboygan MGP facility
- 13169 Northline Road facility
- Wilson's Grocery facility
- Sanborn Service/Am. Bean & Grain facility
- Portage Creek Toxic Substance
- Linden Multi-Site Investigation
- ISC Plating, Inc.
- Blanchard Grocery facility

Project Director/Manager; Remedial Investigation (RI) Oversight at the former State of Michigan Former Albion Steel Facility—Coordinated and provided technical risk-based assessment oversight with respect to groundwater contaminants associated with historical releases which occurred at the former Union Steel facility's petroleum underground storage tank (UST) farm in Albion, Michigan. Completed all established objectives of the RI efforts set forth in a formal RI work plan. As a prerequisite to implementing the RI studies, postured the facility to be the State's first formal project qualified to receive reimbursements through a local brownfield program.

Project Director/Manager; Facility Demolition and Waste Assessment Oversight at the State of Michigan Former Springfield Elementary School Facility—Provided project oversight and coordinated technical personnel to perform a preliminary assessment of the environmental risks associated with razing one contiguous multi-level elementary school constructed/fabricated with a variety of asbestos-containing materials (ACMs) in Battle Creek, Michigan. Once the elementary school's risks were prioritized, detailed engineering specifications were prepared, a trade contractor (TC) was procured, and the structure was razed. Activities coordinated included a detailed facility inspection of vaulted utility tunnels, ACMs and universal waste assessment and abatement, utility abandonment, land surveying, the preparation of engineering bid specifications, the performance of limited subsurface soil boring investigations, UST verification of soil remediation sampling, and formal document preparation/review.

Project Director/Manager; Facility Demolition, Remedial Investigation and Waste Characterization/Abatement Oversight at the State of Michigan Former Owosso Sugar Beet Facility – Provided project oversight and scheduled technical personnel to perform a multitude of assignments prior to and concurrent with razing four large building structures and undertaking corrective actions to abate environmental exposure risks identified at a facility located in Owosso, Michigan. These efforts entailed the performance of a detailed facility inspection; utility abandonment; the preparation of engineering bid specifications to procure a competent demolition TC to handle the demolition activities; subsurface soil boring investigations; universal/liquid waste characterization, classification, quantification, and disposal/reclamation; geophysical assessment activities; soil abatement, and all aspects of formal reporting/project documentation.

Project Director/Manager; Facility Demolition and Soil Abatement Corrective Actions at the State of Michigan Former Cook Family Foods Facility—Coordinated and scheduled technical personnel to perform a multitude of assignments prior to and concurrent with the razing of a large multi-level meat processing facility in Hamtramck, Michigan. Directed the performance of a detailed facility inspection; the preparation of engineering bid specifications to procure a competent demolition TC to handle the demolition activities; universal/liquid waste characterization, classification, quantification, and disposal/reclamation. Directed the undertaking of corrective actions to exhume and perform soil abatement activities associated with abandoning petroleum USTs and subsurface concrete grease vaults at the facility, as well as managed all aspects of formal reporting/project documentation.

Project Director/Manager; Subsurface Facility Assessment Oversight at the State of Michigan Former Panelyte Facility—Coordinated and provided technical risk-based site assessment oversight with respect to soil/groundwater contaminants associated with historical activities conducted at and adjacent to the subject facility located in Kalamazoo, Michigan. Directed management staff in the implementation of RI activities including performance of soil borings, the installation of monitoring wells, the collection of discrete soil and groundwater samples during vertical profiling, the performance of a geophysical study to evaluate the site for suspected buried drums, and the prepared/reviewed technical documents designed to guide investigations and report findings of their activities.

Project Director/Manager; Facility Remedial Investigation and the Decommissioning of the State of Michigan Former Baker Oil Bulk Petroleum Storage Facility—Directed the initial subsurface/geophysical assessment efforts to evaluate the soil and shallow groundwater quality and potential existence of additional USTs beneath and adjacent to the Baker Oil bulk petroleum facility located in Marshall, Michigan. Several abandoned AST systems existed at the subject property. Based on preliminary studies, a contract modification was obtained from the State of Michigan to remove the existing AST systems and undertake additional RI activities off-site and down-gradient of the bulk facility. A TC was retained, the AST systems were razed, and a series of double-cased monitoring wells and slug-testing were employed down-gradient of the facility to further assess the horizontal/vertical distribution of contaminants attributable to historic facility releases.

Project Director/Manager; Facility Demolition, Subsurface Assessment, and Waste Characterization at the State of Michigan Former Berger-Conagra/Semet-Solvey Facility—Provided project oversight and coordinated and scheduled technical personnel to perform a multitude of assignments prior to razing three building structures and four large concrete silos at the Owosso, Michigan facility. As a prerequisite to razing the structures, performed detailed facility inspections and numerous regulated substances and hazardous wastes were characterized and removed from the Semet Solvay facility. Prepared engineering bid specifications completed subsurface soil boring investigations; classified universal wastes for disposal/reclamation, and all structures were subsequently razed. Finalized formal report documenting the project events and submitted to the State of Michigan.

Project Director/Manager; UST System Removal and Assessment at the State of Michigan Former A-1 Automotive Facility—Directed technical staff in the establishment of specifications to guide the proper removal of several abandoned UST systems (regulated and unregulated) at the former A-1 Automotive facility in Morenci, Michigan. The UST systems were subsequently exhumed and initial assessment/closure samples were collected. Based on analytical findings, a confirmed release was filed, and RI/feasibility study (FS) efforts were undertaken to assess the extent of impact attributable to the leaking USTs. Based on the RI/FS efforts, the risks associated with the release were deemed not to be an immediate threat to human health and the environment, so no further actions were taken.

Project Director/Manager; UST Removal, Corrective Action, and Closure Program at the Lansing School District –

Directed and coordinated all technical aspects and staff in the proper closure of 33 UST systems throughout the Lansing School District's regulated/unregulated UST facilities. Publicly released solicitations for the UST removal program, procured contractors, and formally closed all facilities over one summer. Confirmed releases were identified at several facility locations; however, the use of an on-site portable gas chromatograph expedited corrective actions and site restorations. Notably, the district's main bus terminal required significant soil and groundwater abatement concurrent with the installation of a new refueling facility. Removed nearly 10,000 yards of affected soils containing isolated zones contaminated perched groundwater and free product. Recovered approximately 10,000 gallons of affect groundwater/NAPL during dewatering operations. The State of Michigan acknowledged formal closure for all facilities with reported releases.

Project Director/Manager; Emergency Response and Expedited NAPL Recovery Actions at the City of DeWitt Department of Public Works—

Directed and implemented the emergency removal and corrective actions associated with the facility's ruptured diesel fuel UST. During the performance of a response action, installed and operated several NAPL interceptor wells affixed with pneumatic pumps and a total fluids recovery well for several weeks due to the proximity to a local receptor (the Looking Glass River, located 100 feet down-gradient of the release area). Recovered approximately 600 gallons of diesel fuel and 22,000 gallons of affected groundwater concurrent with soil abatement efforts. The facility received an "unrestricted" closure.

Project Director/Manager; UST System Removal and Groundwater Corrective Actions at Don's Party Store—

Directed the removal of five UST systems at a leaking UST facility in Laingsburg, Michigan. Based on field observations a confirmed release was reported and RI efforts were undertaken to define the horizontal and vertical extent of groundwater impact at the facility. Evaluated hydrogeologic characteristics of the shallow geology beneath the site (located approximately 800 feet from Round Lake). Installed an activated carbon groundwater treatment system at the site; it operated for approximately four years before the facility received formal closure.

Project Director/Manager; UST Emergency Response Actions at the Consolidated Freightways Lansing Terminal—

Directed and implemented the emergency removal and corrective actions associated with a 10,000-gallon diesel fuel UST system, which experienced a ruptured underground ancillary dispenser line. Several monitoring wells and a recovery well containing a hydrocarbon recovery system were installed at the facility during the performance of a response action. Recovered more than 4,800 gallons of NAPL, abated approximately 1,650 cubic yards of grossly affected, and remediated about 15,500 gallons of petroleum-tainted groundwater. Defined the extent of groundwater impact and implemented closure monitoring pursuant to Part 213 closure statutes.

EMPLOYMENT

Keck Consulting Services, Inc. /Hunter-Keck (Associate Scientist/Department Manager), 1984 to 1993
Abonmarche Environmental Services/LANDMARK Technologies, Inc. (Department Manager/VP), 1993 to 2006
Environmental Consulting & Technology, Inc. (Senior Scientist/Principal Scientist), 2006 to 2020
Environmental Resources Group, LLC (Senior Project Manager/Senior Geologist) 2020 to current

PROFESSIONAL AFFILIATIONS

American Institute of Professional Geologists



ROBERT T. REICHENBACH, C.P.G.
PRESIDENT
SENIOR GEOLOGIST

EDUCATION

B.S. Geology, Western Michigan University, 1985

CERTIFICATIONS

Certified Professional Geologist, #9090, American Institute of Professional Geologists

Certified Underground Storage Tank Professional, #236, State of Michigan

Certified Waste Treatment Plant Operator, #W-4176, Classification A-2d, B-3b

PROFESSIONAL EDUCATION COURSES

"Environmental Remediation and Risk Management Conference", Michigan Department of Environmental Quality (MDEQ), October 14, 2015

"Remediation Workshop", Association of Environmental & Engineering Geologists, September 9, 2015

"Understanding and Accelerating Remediation of Contaminated Groundwater," Regenesi, April 28, 2004

"8-Hour Health and Safety Refresher," Safety Unlimited Jules Griggs, January 23, 2015

"Sampling Strategies and Statistics Training for Part 201 Cleanup Criteria," MDEQ

"Michigan Air Emissions Reporting System (MAERS) Workshop, MDEQ

"M & A Advisory Services - Lead Assessor Course," Environmental Resources Management Group (ERM)

"Project Management Course," ERM, January 1998

"Risk Based Corrective Action," Foster Wheeler, July 12, 13, 1995

"Site Remediation - Case Study - Michigan Environmental Health Association," Groundwater Conference, October 1991

"Confined Space Entry Training Course," Competent Entrant, Attendant & Entry Supervisor, Groundwater Technology, Inc., February 9, 1994

"DOT/HM - 126F H.A.Z.M.A.T. Employee Training," Groundwater Technology, Inc.

"OSHA Excavation and Trenching Safety Regulations, Competent Person Training Seminar," Groundwater Technology, Inc., May 13, 1994

"Managers Health and Safety Training," Groundwater Technology, Inc.

"40-Hour Hazardous Waste Site Activities Initial Health and Safety Training," Groundwater Technology, Inc., July 8, 1988

"Geology Field Studies", San Diego State University, January-April, 1986

PROFESSIONAL EXPERIENCE

Petroleum Pipeline Pump Station: Southeast Michigan – Project Director responsible for completing the final assessment/closure activities for a release of diesel fuel from an aboveground storage tank on the

property during construction of a pipeline pump station. Activities included review of previously collected data, meeting with the regulatory agency representatives, conducting a site assessment, data analysis, and preparation of a No Further Action request on behalf of the PRP for the release.

Newspaper Production Facility: Midwest United States – Project Director responsible for completing compliance reporting involving wastewater discharge to the POTW, annual air emissions reporting, preparation of spill prevention, control, and counter-measures, and slug control/spill prevention plans and other associated regulatory compliance services.

Automotive Service Center: Clinton Township, Michigan - Project Manager responsible for final assessment and remediation activities of multiple releases of fuels from leaking underground storage tanks and historic operations at a former automotive service facility.

The Michigan Department of Environment Great Lakes and Energy (EGLE) was the responsible for addressing the environmental impacts of the site as a result of a bankruptcy of the former property owner.

The overall project goal was to eliminate free product from the groundwater and reduce the sources contributing to the groundwater contamination. A total of 49,535.26-tons of petroleum contaminated soil were excavated and disposed of at a Class II landfill. A total of 1,052,865-gallons of groundwater were treated and discharged to the sanitary sewer system. Removal of petroleum contaminated soil by excavation and dewatering petroleum impacted groundwater significantly reduced the levels of contamination at the Former Montgomery Ward site.

Solid Waste Landfill: Waterford, Michigan - Administration of the contract on behalf of the State of Michigan and evaluation of the monitoring and maintenance of a leachate pretreatment system. Activities also include leachate discharge monitoring in accordance with a Detroit Water and Sewer Department (DWSD) wastewater discharge permit. The DWSD permit requires semi-annual self-monitoring reports, semi-annual sampling of the system following the accepted time weighted application, and annual site meetings with DWSD personnel. Contaminants of concern related to this site include VOCs, metals, and PFAS compounds. The leachate pre-treatment system was recently modified to address PFAS compounds. The pre-treatment system is sampled on a semi-annual basis for the compounds required by the Great Lake Water Authority (GLWA) Industrial discharge permit and has recently been modified to include PFAS.

This project also includes operation and maintenance of a landfill gas recovery system, reviewing data collected by the service contractor, summarizing gas monitoring results and preparing on a quarterly basis figures that summarize vacuum influence at monitoring locations. Mr. Reichenbach works with the service contractor to assess flare operation, trouble shoot the flare system as needed in order to maximize gas capture and flare operation, directs the contractor to monitor and re-balance the landfill gas collection system, as needed and to the extent practicable, to distribute vacuum to the areas where the system is not currently delivering vacuum.

ERG samples 33 groundwater monitoring wells at this site at regular intervals. Sample analysis includes VOC, metals, and PFAS compounds. The low flow sampling for the PFAS compounds is conducted in accordance with ERG's PFAS Sampling Procedure Matrix.

Former Sanicem Landfill Brownfield Redevelopment, Dutton Corporate Centre, LLC, Auburn Hills, Michigan — Performed due care requirements for this former unregulated landfill facility. This project involved the redevelopment of the former Sanicem Landfill and adjoining property. The proposed site use will be a high technology office and industrial park. The site consisted of approximately 145 acres in Oakland County, Michigan. The landfill was never appropriately lined or capped, nor were adequate leachate collection or methane venting systems installed. The landfill ceased operation in the early 1980s. Based on the results of the preliminary due diligence study, it was determined that the site would be suitable for redevelopment, provided the appropriate remedial measures and due care obligations were instituted. Currently Mr. Reichenbach manages landfill gas monitoring/venting, leachate collection and treatment, compliance with the POTW discharge permit, soil erosion control, and ongoing monitoring and reporting.

State of Michigan Statewide Expanded TRIAGE (SWET) Program — Project support/data QA/QC review for State of Michigan LUST TRIAGE projects. Environmental Resources Group, LLC (ERG) was retained by the Michigan Department of Technology, Management and Budget (DTMB) to provide limited site investigation and sampling services on behalf of the EGLE under their Expanded Triage Program (ETP). The SWET projects involve targeted investigations of several orphan LUST sites to determine current environmental conditions and remaining risks posed by any contamination. The limited site investigation activities performed by ERG included geophysical and subsurface drilling as well as soil and groundwater sampling activities performed in accordance with a work plan prepared for and approved by the EGLE for multiple orphan LUST sites in the Kalamazoo and Warren District areas. Upon completion of the field work, ERG provided the SWET program coordinator and district project managers with a summary report of each site's investigation activities.

Municipal Government-Keego Harbor DPW: Southeast Michigan - Senior Project Manager responsible for final assessment/closure activities for a release of gasoline from a leaking underground storage tank. Activities included subsurface assessment, development of a corrective action plan and implementation of a groundwater monitoring plan.

Manufacturing Company-Lyon Gear: Rochester, Michigan - Senior Project Manager responsible for completing a spill prevention control and countermeasures (SPCC) plan for an industrial manufacturing client. Project activities included completion of a facility audit to review chemical, oil and waste storage practices, completion of the draft SPCC plan and review and approval of same by a professional engineer. Mr. Reichenbach completed the facility walk-through, recommended some improvements and finalized the SPCC plan. The company is now working toward ISO 14001 certification of which the SPCC plan was a requirement.

Automotive Supplier: Rochester, Michigan — Project Director responsible for completing the closure-in-place of three unregulated underground storage tanks (USTs) which were buried beneath the facility's interior floor. Mr. Reichenbach was responsible for direction of contractors during UST location and cleaning activities. He directed personnel to collect samples from beneath each UST for analysis in a laboratory. Following sample collection, the USTs were filled with inert fill and the floor was replaced.

Publishing: Mid-Michigan - Regulatory compliance support including SPCC plan preparation, air emissions inventory/reporting, air permits and interfacing with the applicable regulatory agencies for a daily major newspaper production facility. Mr. Reichenbach also supplies regulatory compliance services related to wastewater discharge at the facility. Site assessment/site remediation activities were completed at this facility by Mr. Reichenbach in the mid-1990s.

Petroleum Spill: Luna Pier, Michigan - Senior Project Manager responsible for initial and final assessment activities for a release of gasoline and diesel fuel to the subsurface via a breach in a petroleum distribution pipe. Abatement activities included subsurface assessment and development of a corrective action plan to remediate the impacted soil and groundwater to acceptable levels protective of surface water. The remediation of this site involved the excavation and removal of severely impacted soil, deployment of a dual-phase soil vapor extraction system, free product recovery and injection of oxygen releasing compounds. Emergency response activities were coordinated with EGLE, USEPA and US Coast Guard.

EGLE Project Management Contract: Romulus, Michigan - ERG's Senior Project Manager responsible for direction of final assessment, completion of a feasibility analysis of remedial options, implementing corrective action involving excavation, dewatering and deployment of oxygen releasing compounds. The Part 201 project was completed for the State of Michigan under the project management program. Mr. Reichenbach's role was as a professional consultant. Mr. Reichenbach was responsible for all soil and groundwater characterization, development of a corrective action plan, preparation of a bid package and selection of trade contractors for the remedial activities and coordinating remedial activities. Activities were culminated with the submittal of an activity report summarizing the site project activities.

Multi-Site Divestment Project: Southeast Michigan - Senior Project Manager responsible for completing real estate divestiture assessments at 26 locations in the metropolitan Detroit area. The site assessments commenced at intervals of four sites per week and work was completed for all 26 properties in a period of three months. The site assessments involved placement and installation of an average of six soil borings/monitoring wells per location. Mr. Reichenbach collected soil and groundwater samples from each soil boring/monitoring well. Following receipt of the analytical results, Mr. Reichenbach prepared site divestment assessment reports for each property. Mr. Reichenbach supervised five full-time professional staff (four senior scientists and one project manager) to complete this assignment. All project personnel were required to attend two 8-hour client specific health and safety training sessions for this project. The clients schedule was achieved and all work was completed without a health or safety incident.

Multi-Site Phase I Environmental Site Assessments: Southeast Michigan - Senior Project Manager responsible for completing phase I environmental site assessments (ESAs) at 13 locations in the metropolitan Detroit area. The phase I ESAs were completed for all 13 locations in a 30-day period. The assessments were completed in accordance with the ASTM standard for phase I ESAs. The client required that reports be completed in a specified format and two levels of client review were completed prior to reports being finalized. Mr. Reichenbach dedicated five professionals to this project to meet the client's short timeline for completion of the project.

Multiple Water Supply - Residential: Southeast Michigan - Coordinate test well installation, aquifer testing, sampling and analysis as part of a water supply evaluation. Complete hydrogeological data

evaluation and groundwater quality assessment for the purpose of supplying drinking water for large residential developments. The assessments were completed in accordance with the EGLE and local health department requirements for water quality and quantity.

Plastic Recycling Company: Livingston County, Michigan - Senior Project Manager responsible for completing a Phase I ESA and, if necessary, a baseline environmental assessment (BEA) for an industrial property. During the completion of the Phase I ESA, Mr. Reichenbach determined the property met the definition of a “facility” due to former manufacturing operations. Mr. Reichenbach was contracted to complete a BEA for the property on behalf of our client, the purchaser, to obtain liability protection for the existing contamination. Mr. Reichenbach also prepared a due care plan for our client which was included with the BEA. This site is currently being utilized by Mr. Reichenbach’s client as a warehouse.

Private Airport: Southeast Michigan - Mr. Reichenbach was contacted by the owner of a private small to medium-sized airport to review available project files pertaining to a release of jet fuel. The property was being sold and the client negotiated that remediation of impacted areas on the property would be completed by the purchaser with funding from an escrow account established by the owner. Our role expanded to review the remediation (excavation) activities taking place. It was determined that the purchaser substantially over-excavated the property. Mr. Reichenbach was then required to assist with negotiating, on behalf of the property owner, an appropriate settlement for expenditures.

Insurance Provider: Multiple Claims - Mr. Reichenbach was contracted by a major insurance company to perform ongoing reviews of several environmental claims related to the release of petroleum compounds at leaking underground storage tank sites. As the project manager responsible for completing the review of these projects, advised the client on payment, billing rates, project direction, technical aspects and allocation of expenditures.

Dry Cleaning Facility: Canton, Michigan - Senior Project Manager responsible for negotiating and implementing a Part 201 closure plan with the EGLE on behalf of a dry cleaning company. Mr. Reichenbach saved the client a substantial amount of money by negotiating with the regulatory agency to reduce the amount of investigation required, as well as eliminating some rework requested by the agency. Mr. Reichenbach implemented the work plan completed the field activities, which involved investigation of utility corridors at the property. Following receipt of the results of the Part 201 investigation, regulatory closure was obtained for this property.

Former Manufacturing Facility: Shelby, Oceana County, Michigan - Senior Project Manager responsible for completing a BEA for a former manufacturing facility. The property was classified as a leaking underground storage tank site, which was known by our client prior to our involvement. Mr. Reichenbach completed a Category N BEA for the property on behalf of our client, the purchaser, to obtain liability protection for the existing contamination that had resulted from the leaking underground storage tank. Mr. Reichenbach also prepared a due care plan for our client which was included with the BEA.

Active Distribution Center: Dearborn, Michigan - Senior Project Manager responsible for direction of final assessment and implementation of corrective action involving excavation and dewatering. Mr. Reichenbach directed removal of impacted soil and groundwater from four separate locations on the property. The site was impacted by historic industrial activities associated with previous property uses. Additionally, the site was impacted by a release of diesel fuel resulting from a leaking underground storage

tank. Activities were completed and each area was characterized to confirm that closure was possible. Mr. Reichenbach's closure was approved by the EGLE.

Residential Development: Brighton, Michigan - Senior Project Manager responsible for completion of a residential water supply evaluation for a multi-unit development in Brighton, Michigan. Mr. Reichenbach was responsible for coordinating drilling and analytical services, determining the areas of investigation, and data review. He completed an environmental assessment of the surrounding area to determine potential sources of groundwater contamination. The successful evaluation offered the client the ability to move forward with the development plans. The evaluation was approved by the local unit of government and the EGLE.

Automotive Dealership: Michigan - Senior Project Manager responsible for completion of assessment and remediation of petroleum and solvent contamination in Michigan. Mr. Reichenbach was responsible for coordinating drilling and analytical services, determining the areas of investigation, and data review. He completed a feasibility analysis to remedy the site and implemented the remediation activities.

EMPLOYMENT

Environmental Resources Group, LLC. (Principal Geologist), 2009 to Present

Wilcox Professional Services, LLC (Senior Project Manager/Environmental Services Manager), 2009 to 2013

Geo Trans, Inc./Tetra Tech, Inc. (Senior Geologist/Midwest Marketing Manager), 2007 to 2009

BCI Engineers And Scientists, Inc., formerly Insight Environmental Services, Inc. (Senior Geologist/Service Area Manager), 2000 to 2007

Environmental Resources Management-Midstates (Branch Manager), 1997 to 2000

Fluor Daniel GTI, Inc., Formerly Groundwater Technology, Inc., (Operations Manager/Project Manager/Geologist), 1986 to 1997

PROFESSIONAL AFFILIATIONS

American Institute of Professional Geologists-Michigan Chapter

Engineering Society of Detroit

Michigan Association of Environmental Professionals

Michigan Cleaners Association

Michigan Manufacturers Association

Michigan Petroleum Association

Muskegon Area Chamber of Commerce

Huron Valley Chamber of Commerce

West Michigan Air and Waste Management Association

Society of American Military Engineers



ALFRED J. JORDAN II, C.P.G.
EXECUTIVE VICE PRESIDENT/
SENIOR GEOLOGIST

EDUCATION

B.S., Geology, Michigan Technological University, 1986

CERTIFICATIONS

Certified Professional Geologist, #9310, American Institute of Professional Geologists

Certified Underground Storage Tank Professional, #1053, State of Michigan

Certified Industrial Storm Water Operator, #12273, State of Michigan

PROFESSIONAL EDUCATION COURSES

FRA 214 Railroad Workplace Safety, On- Track Safety Canadian National Railway, 2018

No-Spills Annual Conference, 2013 through 2018.

AIPG Workshop, Groundwater/Surface Water Interface – Environmental Risk Management, RAM Conference Center, Roscommon, Michigan, June 14 and 15, 2016.

AIPG Workshop, Groundwater/Surface Water Interface – Site Characterization, RAM Conference Center, Roscommon, Michigan, June 16 and 17, 2015.

AIPG Workshop, Groundwater/Surface Water Interface – Characterization, Evaluation and Compliance, RAM Conference Center, Roscommon, Michigan, June 17 and 18, 2014.

AIPG Workshop, Power of Partnership – Owners, Consultants and Regulators, RAM Conference Center, Roscommon, Michigan, June 17 - 19, 2013.

Clean-up Criteria Training, Michigan Department of Environmental Quality, Remediation and Redevelopment Division, Grayling, Michigan, June 21 and 22, 2007.

Risk Based Corrective Action Training, Foster Wheeler, September 6 and 7, 1994.

Houston Conference, Petroleum Hydrocarbons and Organic Chemicals in Groundwater: Prevention, Detection, and Restoration. The American Petroleum Institute and The Association of Groundwater Scientists and Engineers, 1993.

OSHA 40-Hour Health and Safety Training for Hazardous Waste Operations and Emergency Response, March 1991.

OSHA 8-Hour Refresher Training Program – Annual Updates.

Environmental Site Assessment Seminar – Phase II, Professional Service Industries, Inc. (PSI), November 1989.

Environmental Site Assessment Seminar – Phase I, PSI, June 1989.

PROFESSIONAL EXPERIENCE

PART 201 AND PART 213 REGULATORY COMPLIANCE

Multisite Project Management, Michigan — Senior Project Manager for more than 100 retail petroleum facilities, petroleum distribution facilities, and industrial facilities. Responsibilities included the supervision of UST removals with initial abatement measures (if necessary), site assessments, site investigations, corrective actions, and remediation. Tasks entailed project scheduling, field activities, interpretation of field and laboratory data, report writing (including IAR, FAR and Closure Reports), feasibility analysis, regulatory compliance, restrictive covenants (and alternate mechanism), and RBCA implementation.

Risk Based Site Closures, Michigan — Involved with the implementation of Risk Based Corrective Action (RBCA) for petroleum industry clients (Part 213) and Part 201 clients to include risk assessment, exposure pathway determination, reporting, and closure. Directly involved in the closing of more than 50 sites under RBCA. Attended MDEQ, NGWA, and client-sponsored training courses on RBCA. Assignments also included involvement with ASTM standards for Tier II RBCA modeling.

PART 201 AND PART 213 REMEDIATION

Various Projects, Michigan — Conducted several pre-construction remedial investigations and feasibility analysis to determine the most cost-effective remediation alternative based on the client's needs. Remedial technologies utilized included natural attenuation, excavation of source area, multi-phase extraction, SVE/AS, ozone, in-situ bio-augmentation, in-situ chemical reduction, in-situ oxidation, and solidification. At many of these projects, the tasks involved environmental oversight including manifesting, logistical control, soil and groundwater sampling, regulatory compliance, and Operation and Maintenance.

Remedial Investigation, Niles, Michigan — Directed the investigation and delineation of a light non-aqueous phase liquid (LNAPL) and dissolved phase hydrocarbon plume from a release at a gasoline storage and distribution facility. The investigation involved placing of numerous monitoring wells to delineate the extent and amount of impact, recommending placement and design of recovery wells, and the design and installation a remediation system. Remediation also involved the use of bio-remediation. Tasks including keeping regulatory authorities informed and obtaining closure via No Further Action (NFA).

ENVIRONMENTAL SITE ASSESSMENTS

Phase I and Phase II ESAs — Conducted numerous Phase I and Phase II Environmental Site Assessments (ESAs) throughout Michigan. Clients include Lending Institutions, Realtors and private companies. All ESAs are conducted in accordance with American Society for Testing and Materials (ASTM) Standard E 1527-13.

BASELINE ENVIRONMENTAL ASSESSMENTS/DUE DILIGENCE

BEA/Due Diligence — Conducted multiple Baseline Environmental Assessments (BEAs) with Section 7a Due Care Compliance Analysis for petroleum retail suppliers involving the acquisition of numerous retail petroleum sites throughout Michigan.

EMPLOYMENT

Michigan Consulting and Environmental, Inc. — Mt. Pleasant, Michigan
Senior Project Manager
2009-2014

TerraPure Environmental Management, Inc. — Muskegon, Michigan
President/Project Manager/Senior Hydrogeologist
2004-2009

Lakeshore Environmental, Inc. — Grand Haven, Michigan
Vice President/Project Manager
1993-2004

Dell Engineering, Inc. — Holland, Michigan
Hydrogeologist II
1991-1993

Professional Services Industries, Inc. — Muskegon, Michigan
Project Manager/Geologist/Engineering Technician
1986-1991

PROFESSIONAL AFFILIATIONS

American Institute of Professional Geologists (AIPG)
Michigan Petroleum Association (MPA)
Michigan Association of Environmental Professionals (MAEP)
Muskegon Lakeshore Chamber of Commerce



CRAIG A. SAVAGE, CPG
SENIOR PROJECT MANAGER

EDUCATION

B.A., Environmental Studies, Binghamton University (SUNY-Binghamton)
B.S., Geology, Binghamton University (SUNY-Binghamton)
M.S., Geology, University of Nebraska-Lincoln

CERTIFICATIONS

Certified Professional Geologist, #08052, American Institute of Professional Geologists
Certified Professional Geologist, #113498, Kentucky
Certified Underground Storage Tank Professional, #284, State of Michigan

PROFESSIONAL EDUCATION COURSES

40-Hour Hazardous Waste Site Activities Initial Health and Safety Training,
8-Hour Health and Safety Refresher
e-Rail Safe

PROFESSIONAL EXPERIENCE

Michigan Underground Storage Tank Authority funded Leaking Underground Storage Tank Investigations, Various Locations in Michigan, Various Clients

Managed the technical and financial aspects of up to 60 MUSTA funded projects in southeast and central Michigan, overseeing development of scopes of work, obtaining permits and off-site access, directing investigation and remediation activities, writing IARs, FARs/CAPs, and Closure Reports.

Tracer Dye Study, Confidential Landfill, Southeast Michigan

Prepared scope of work and implemented plan for determining whether groundwater from various surface bodies of water within a landfill were in hydraulic communications with each other. Injected a solution of fluorescein dye into the higher elevation water body and collected water samples from the lower surface water bodies and groundwater sampling points to determine whether the dye was traveling between water bodies. Used a field fluorometer and ultra-violet detectors to assess the down gradient water samples and surface waters.

Power Plant Water Allocation Studies, Various Locations, Various Clients

Reviewed hydrogeological conditions and conducted water resource evaluations for siting proposed power plants in New Jersey and Indiana. Reviewed existing local supply wells and current water allocation budgets, assessed groundwater quality, evaluated potential withdrawal rates from local aquifers, and conducted meetings with other team members, subconsultants, and state regulators.

Poly/Per Fluorinated Alkyl Substances (PFAS) Investigation, Former Manufacturing Facility, Genesee County Brownfield Authority, Flint, MI

Directed planning and participated in collection of groundwater samples for PFAS evaluation at a former industrial facility. The client was concerned about liabilities associated with PFAS due to potential upgradient sources and proximity to surface water.

Groundwater and Soil Vapor Monitoring, Large Public University in MI

Conducted groundwater investigation and soil vapor intrusion assessment at a former manufacturing building currently used as an archive. Collected data for determining groundwater flow direction and gradient, concentrations of chlorinated volatile organic compounds in groundwater and sub-slab soil gasses under the building, and assessment of indoor vapor intrusion risks.

Groundwater Remediation and VI NFA, Former Manufacturing Plant, St. Johns, MI

Advanced soil borings and used membrane interface hydraulic profiling technology (MIHPT) to determine distribution of chlorinated VOCs in a thin sand and gravel aquifer and determined extent of VOC penetration into adjacent clay units. Data was used to design and implement a permeable reactive barrier (PRB) consisting of microparticulate GAC to sequester contaminants, and ZVI and anaerobic biological remediation to destroy contaminants in place. Trichloroethene concentrations decreased from 22,000 ug/L to less than detection limits in 12 months. Prepared a detailed conceptual site model and provided data to demonstrate that the vapor intrusion pathway is not complete in neighborhoods surrounding the site, obtaining an NFA for vapor intrusion.

Phase II ESA, Former Landfill, North Miami, FL

Planned and oversaw subsurface investigation of a 10-acre portion of a former Landfill under consideration for purchase by the University of Miami. Advancing 13 soil borings using sonic drilling techniques and installed monitoring wells and soil gas points to characterize soils, assess distribution of trash, collect soil and groundwater samples, and collect soil gas samples. Samples evaluated for VOCs, PAHs, pesticides, herbicides, metals, polychlorinated biphenyls, radium, gross alpha, PFAS, and asbestos.

LUST Investigation and Remediation, EGLE ISID, Monroe Township, MI

Project Manager for EGLE funded former LUST site that is currently used as a residential property. Advanced soil borings, collected soil samples, and used passive soil gas sampling techniques to determine the impacted area, and installed sub-slab vapor pins and collected indoor air samples to assess the vapor inhalation risks. Excavated impacted soils and installed a sub-slab vapor depressurization system to mitigate risks and close the site.

Area-Wide Aquifer Contamination Assessment, Dean St. Residential Wells, EGLE ISID, Highland Township, MI

Conducted investigation of a large, chlorinated VOC groundwater contaminant plume that affected dozens of private wells over a large area. Advanced MIHPT borings to determine the horizontal and vertical distribution of combined petroleum and chlorinated VOCs, collected samples from monitoring wells and vertical aquifer profiling borings, collected passive soil gas samples, and prepared several reports to summarize historical property uses, exposure pathways, and VOC distribution in the study area. Compiled data from various consultants and agencies and presented in a single comprehensive report for the EGLE project manager.

LUST Investigation and Remediation, Meridian Township Service Center, Meridian Township, MI

Oversaw investigation of soil, groundwater and soil vapor gas assessments at a LUST site operated by a municipality and prepared an Initial Assessment Report, Final Assessment Report, and Closure Report for submitted to EGLE. The project was funded through MUSTA and is being closed using a restrictive covenant.

LUST Investigation and Remediation, Gasoline Station, Durand, MI

Directed MUSTA funded investigation and closure of a LUST release. Impacted soils were excavated and an investigation consisting of soil and groundwater characterization and sub-slab vapor pin sampling demonstrated that the release posed no remaining exposure risks with use of a restrictive covenant. A Closure Report including a restriction on land use was submitted to EGLE.

Phase II ESA, Private Developer, Ypsilanti, MI

Conducted an extensive soil, soil vapor, and groundwater investigation to assess the nature and extent of environmental contaminants at a former 10-acre industrial property, and evaluate exposure risks for meeting due care obligations. Worked closely with the client and the client's architects and engineers to ensure safe construction and post-development conditions.

LNAPL Monitoring and Reporting, Large Public University in MI

Conducted monthly LNAPL thicknesses monitoring and recovery at a university bus maintenance facility. The source of LNAPL was a hydraulic oil leak from hydraulic lift equipment.

Phase I ESA, Former Steel Mill, Trenton, MI

Part of a multidisciplinary team tasked with the completing a Phase I ESA for a 200-acre property formerly operated as a steel mill. The work included review and consolidation of previous reports and file materials over a 20-year period, two site walks to identify more than 120 RECs and RCRA AOCs, and prepare an extensive document to identify potential environmental issues of interest to future developers. Assisted with evaluation of pilot study to add amendments to soil to foster growth of contaminant-reducing plants in nutrient-poor areas. Responsible for the hydrogeological aspects of the pilot study, including installation of groundwater monitoring wells and determining groundwater conditions at the site.

LUST Investigation and Remediation, Gasoline Station, Bancroft, MI

Directed MUSTA funded investigation and remediation activities associated with LUSTs at an operating retail gasoline station and convenience store. Prepared an Initial Assessment Report, a Final Assessment Report, and several Supplemental Reports including a remedial feasibility analysis. Remediation consisted of soil excavation and vapor mitigation via a sub-slab depressurization system. LNAPL was reduced to nearly non-existent levels using multi-phase extraction and manual bailing approaches. Conducted a focused feasibility study and a remedial action plan to address groundwater contamination and obtained EGLE approval for injection of microparticulate carbon and ISCO products. Site will be closed once compounds are reduced to the point where institutional or engineering controls can mitigate remaining risks.

UST Closure and Site Assessment, International Airport, Romulus, MI

Oversaw the closure and removal of contaminated soil and materials from two large UST basins holding 10,000-gallon fuel tanks. Releases were discovered, resulting in the remediation by excavation of contaminated soil and removal of accumulated water. Excavation floor and sidewall samples indicated remedy was successful and a closure report with institutional controls was prepared and approved by EGLE.

Subsurface Investigation and Final Assessment Report, Gasoline Station, Mt. Clemens, MI

Directed field activities to investigate the extent of contamination associated with a LUST at a retail gasoline and convenience store. Planned and implemented installation of soil borings, groundwater monitoring wells, soil gas vapor probes, and performed an LNAPL assessment. Submitted a final assessment report to the EGLE which was approved with conditions.

Multiple Industrial Phase II ESAs, Private Developer, Detroit, MI

Conducted Phase II ESA investigations at multiple industrial sites, including the former Packard automotive plant, to determine whether the properties are Part 201 facilities and to identify due care obligations post-development. These properties were to be part of an area-wide comprehensive rehabilitation of blighted portions of Detroit.

LUST Investigation, Arenac County Land Bank Property, EGLE ISID, Turner, MI

Delineated the extent of petroleum contaminants at a former gasoline retail station as part of a county Brownfields program through the EGLE orphan site program. Evaluated human health and environmental risks associated with the site, and prepared a feasibility study recommending corrective actions to return this property to a useful purpose.

LUST Closure, DTMB Facility, EGLE ISID, Caro, MI

Completed remedial investigation of soil and groundwater contamination associated with a former gasoline UST at a State of Michigan owned facility. Evaluated the exposure risks and prepared a Closure Report which was approved by EGLE.

Hydrogeological Study and Groundwater Monitoring, Public School System, Brandon, MI

Investigated groundwater and surface water quality impacts associated rapid infiltration basin discharges from a wastewater treatment plant (WWTP) operated by the school. The investigation was to determine whether chloride, sodium, arsenic, and other chemicals identified in groundwater monitoring wells and nearby residential supply wells were related to the WWTP discharges. Investigation consisted of collecting groundwater and surface water sample, determining surface water and groundwater flow conditions, and preparing a corrective action plan to reduce or eliminate the discharges to groundwater.

Preliminary Site Assessments, MDOT Contract, Various Locations, MI

Advanced soil borings at various MDOT road/bridge construction sites to identify soil and groundwater contaminants prior to construction. Results were used to assess potential risks to construction personnel and to determine soil and water management/disposal options.

UST Removal Services, MDOT Contract, Various Locations, MI

Managed emergency UST closures on an as-needed basis for tanks discovered during MDOT construction activities. Activities included initial assessment, sampling UST liquids, preparing HASPs, and initiation of UST closure within seven days of MDOT notification. After UST removal, collected soil samples according to Part 211 and completed disposal and backfill activities per MDOT direction. Provided reports and maps documenting all UST closure activities.

Voluntary Cleanup Program Investigation, Former Lumber Company, Mobile, AL

Investigated extents of metals and hydrocarbon contaminants at a 100-year-old lumber mill in Mobile, Alabama. The investigation was complicated by adjacent residential subdivisions and surface water

bodies. Extensive areas of fill were identified that originated from another contaminated site. Alternatives were presented in a comprehensive report, and included institutional controls and limited hot spot remediation.

State-Wide Environmental Expanded Triage Program, EGLE ISID, Various Locations, MI

Performed preliminary subsurface investigations at numerous UST sites under the Michigan State-wide Expanded Environmental Triage contract. Worked under very short schedules and tight budgets to collect data and conduct assessments to assist EGLE with prioritizing the agency's efforts for future work at these locations.

Sediment Investigation and Remediation, Manufacturing Plant, Battle Creek, MI

Collected sediment samples from an open ditch that received Therminol 59 hydraulic oil after a release to a storm sewer system. The Therminol was released following a plant explosion and fire in a manufacturing plant. Identified the vertical and horizontal extent of semi-volatile organic compounds in sediment and provided recommendations for corrective actions. Prepared bid specifications for contractors, performed wetland area delineation, and prepared an inland streams and lakes permit before completing sediment excavation and channel restoration to close the site.

Hydrogeological Study at CERCLA Site, Automotive Company Landfill, Rose Township, MI

Developed a conceptual site model for a complex groundwater flow system adjacent to wetlands and surface water bodies near a former industrial landfill. The investigation included deep vertical aquifer profile borings, aquifer pumping tests, computer modeling, and system effectiveness evaluations for a five-year review with USEPA and EGLE.

Groundwater Control Study, Local Conservation Group, Gaylord, MI

Recommended controls on proposed golf course and residential development to protect sensitive fisheries in the Au Sable River. Studies were conducted to assist regulators, LUG, and the developer to implement the specific controls on runoff and groundwater use to protect nearby sensitive trout ecosystems.

Remedial Investigation, Former MGP Site, Petoskey, MI

Conducted a remedial investigation at a former MGP facility in accordance with CERCLA guidelines. The site was located near two public water supply wells and was adjacent to Little Traverse Bay. Contaminants of concern included PAHs, VOCs, metals, cyanide compounds, phenols, and nitrogen-containing organics. EGLE implemented excavation based on information provided from the investigation.

Huron Landfill Methane Gas and Leachate Investigation, EGLE ISID, China Twp., MI

Conducted methane monitoring activities, leachate seep mitigation, and potable water supply well monitoring at a closed landfill. Work included monitoring well and private water supply well sampling, methane gas sampling, excavation and sealing leachate seeps from breaches in cell walls and reporting to the EGLE project manager.

Manistique Landfill Leachate Plume Investigation, Municipal Landfill, Manistique, MI

Developed a scope of work for investigating the extent of a leachate plume associated with a closed landfill in Michigan. Groundwater was at 45 feet below ground surface and migrated toward Lake

Charlevoix through a permeable sand and gravel unit. The investigation involved extensive drilling, hydrogeological tests, and surface water/ groundwater sampling.

Leachate Collection System and Cap Design, Former Landfill, EGLE ISID, Frenchtown Twp., MI

Assisted EGLE-WMD engineers with design of a covered leachate collection and treatment system at a former landfill. The covered leachate collection system replaced open collection ponds and offsite transport and disposal. Advanced dozens of soil borings to prepare isopach maps of the landfill cap thickness and collected Shelby tube samples to determine compliance with cap permeability requirements.

LUST Investigation and Remediation, EGLE ISID, Beaverton, MI

Conducted a remedial excavation and limited in situ chemical oxidation cleanup of a former LUST site adjacent to a large man-made lake. The lake was drained shortly after excavation, making the assessment more difficult as contaminated groundwater elevations fluctuated significantly, creating a large smear zone. EGLE requested evaluations of additional measures, including in situ chemical oxidation in the saturated zone, and testing offshore sediment pore waters at expected groundwater discharge points. The data conclusively proved that petroleum contaminated groundwater was venting to the lake.

LUST Investigation and Illicit Discharge Study, EGLE ISID, New Boston, MI

Determined whether groundwater contaminants associated with an active gasoline retail station entered adjacent storm drains and discharged to the Huron River. Collected groundwater and stormwater samples for evaluation, mapped the storm sewer, and prepared a focused feasibility study to select alternatives to prevent illicit discharges to surface water via the storm water system.

Groundwater Investigation, Former 753rd Radar Station, USACE, Sault St. Marie, MI

Prepared scope of work, schedule, and cost estimates for conducting deep drilling, vertical aquifer profiling, and monitoring well installation to delineate VOC contamination at a former Air Force radar station. Completed a field sampling and analysis plan, site-specific health & safety plan, and QAPP for conducting the investigation, and obtained approval from the USACE to begin the work activities. The investigation was part of a larger investigation being conducted by others under a separate contract.

Four Nike Missile Base Sites, USACE, Four Locations, MI

Conducted FOIA requests at numerous state and local government agencies, and conducted a review of identified materials related to environmental conditions at four former Nike Missile bases in Detroit, Romulus, Southfield, and Marine City, Michigan. The FOIA reviews were to support preparation of preliminary assessments (PAs, under CERCLA) for each site.

Chlorinated Hydrocarbon Groundwater Plume Investigation, Automotive Plant, Wyoming, MI

Managed a multiphase investigation to identify AOCs related to RCRA units and determine the nature and extent of identified releases. Investigations included horizontal and vertical delineation of VOCs in groundwater migrating under an adjacent residential area, RCRA closure of a large stormwater retention basin, closure of other RCRA storage units, and risk evaluations and focused feasibility studies to select options for interim remedial actions. Installed groundwater capture system to provide hydraulic control and assisted client's legal counsel with data collection related to a class-action lawsuit.

Soil and Groundwater Investigation, Manufacturing Plant, Bronson, MI

Prepared scope of work and oversaw soil investigation and vertical aquifer profiling at a former industrial property identified by EPA as one of several potential sources in a regional CERCLA groundwater cleanup action. Reviewed reports by other PRPs and provided technical advice to client's legal team to negotiate a scope of work acceptable to the client, EPA, and EGLE.

LUST Investigation, EGLE ISID, Kalamazoo, MI

Delineated the extent and stability of a groundwater contaminant plume associated with a former gasoline station later converted to a restaurant. LNAPL was still present in monitoring wells and the plume extended toward the public water supply well field. The scope of work involved installing groundwater monitoring wells across a large area and conducting quarterly sampling to demonstrate the plume was stable and no longer expanding.

Groundwater Remediation System Demolition, EGLE ISID, Schoolcraft, MI

Prepared contractor specifications and oversaw contractor activities to demolish buildings associated with a large-scale groundwater remediation system. One building housed a large-scale bio-curtain remediation system and the other an air stripping system with a 40-foot-tall air stripping tower. The work also included abandoning 100 extraction/reinjection wells. All facilities were removed to a depth of four feet (below plow depth) to allow the property to return to beneficial agricultural use.

LUST Investigation, City Bus Maintenance Facility, EGLE ISID, Detroit, MI

Conducted subsurface investigation to characterize the extents of LNAPL and soil and groundwater contamination at an active City of Detroit bus depot. Performed a surface geophysical survey to identify underground utilities, and advanced soil borings to collect soil and groundwater samples. Sub-slab soil sampling activities were also conducted to evaluate vapor intrusion risks in nearby buildings. The data were used to prepare a remediation feasibility study for the City and EGLE.

LUST Remedial Excavations, EGLE-ISID, South Haven and Detroit, MI

Delineated the extent of contaminated soil at former gasoline retail stations and prepared specification packages for contractors to conduct remediation via excavation. The projects were funded through the American Recovery and Reinvestment Act and involved reporting to State and Federal agencies on the project status. The excavations removed most of the contaminated soil at each site and resulted in full or partial closures at each site, allowing the property owners to redevelop the properties for beneficial uses.

LUST Investigation and SVE Remediation, EGLE ISID, Ubyly, MI

Installed, operated, and maintained an SVE system at a LUST site. The site formerly contained LNAPL and was upgradient from a municipal well and a surface stream, making it a high priority site for cleanup by the State.

UST Closure, DTMB Parking Garage, EGLE ISID, Lansing, MI

Completed remedial investigation of soil and groundwater and closure of a LUST in the basement level of a parking garage, with only 6.5 feet of overhead clearance. The limited clearance required specialty equipment and manual techniques to obtain soil samples to characterize the site and implement the UST closures. Completed the site characterization and the USTs were closed in-place by filling with flowable fill from the street level.

LUST and NAPL Investigation, EGLE ISID, Albion, MI

Delineated the extent of LNAPL at a former gasoline retail station using LIF/UVOST technologies, Sudan IV oil-shaker test kits, and analytical laboratory evaluation. The data were used to evaluate remaining risks associated with the site and prepare a focused feasibility study with recommended options for remediation.

LUST Remedial Excavation, EGLE ISID, Hartford, MI

Delineated the extent of contaminated soil and groundwater at a former gasoline retail station. Conducted geotechnical drilling to determine soil strength characteristics, prepared specifications for construction bidders, and conducted remediation through excavation. The excavation removed most of contaminated soil and allowed a restricted closure at the site, allowing the property owner to redevelop the site as a restaurant.

LUST and NAPL Investigation, EGLE ISID, Kalamazoo, MI

Monitored LNAPL at a former gasoline retail facility and conducted enhanced free-product recovery events, a soil vapor survey, and other investigation activities over several-square-blocks around the site to evaluate indoor air inhalation exposure risks.

Groundwater Resource Assessment and Supply Well Permitting, VDS Farms, Scotts, Michigan

Permitted and installed a new Type III water supply well to provide water for a dairy operation with 20 employees and 1,800 cows. An initial regional aquifer assessment was conducted to review well logs and specific capacity values for other well using the local unconfined sand and gravel aquifer, and determine whether it is capable of supplying 125,000 gallons per day to the facility to support planned expansions to the dairy operations. Subsequent activities included permitting and drilling a test boring/observation well to obtain soil samples and identify general aquifer thickness and characteristics; then designing and installing an 8-inch production well and conducting aquifer pumping tests for a long-term well capacity evaluation. Collected samples from the well for analyses of drinking water parameters as required by the County Health Department.

Groundwater Resource Assessment and Type I Water Supply Well Installation, Private Developer, Clarkston, Michigan

Permitted and installed a new Type I water supply well for a proposed subdivision in a rural section of Oakland County. Permits for installing a test well were obtained from the EGLE Drinking Water Branch, and with their approval, later design, and installation of a larger diameter production well. ERG conducted an initial regional aquifer assessment was conducted to review well logs and specific capacity values for other well using the local aquifer. A step-drawdown test was conducted to determine the well efficiency and a constant rate pumping test conducted to determine aquifer characteristics and projected 100-day capacity without recharge. Collected samples from the well for analyses of drinking water parameters as required by EGLE.

Microbiological Assessment and Supply Well Replacement, Bottled Water Company, Missouri

Identified sources of turbidity and coliform bacteria that affected routine water quality samples at a spring source for bottled drinking water. Conducted contaminant source inventory and inspected source area to identify fractures and other direct entry points for precipitation to enter rock aquifer system. Identified area of partial collapse of the karst fracture system, which allowed surface soil and bacteria to enter the aquifer during heavy rains. Replaced the spring collection boxes with a well to minimize surface impacts

and conducted pumping tests to evaluate sustainable yield. Collected groundwater and surface water samples and conducted chlorine tracer tests to demonstrate a hydraulic connection between the groundwater and the spring. Prepared reports to obtain a permit from the State of Missouri to operate the well as bottled spring water source without the turbidity and bacteria issues.

Wellhead Protection Area Update, Municipality, Chelsea, MI

Updated a 3-D groundwater flow and particle tracking model to revise a wellhead protection area delineation for the City of Chelsea, Michigan. The update was necessary to incorporate changes in well usage related to well replacement. A report documenting the changes and revisions to the wellhead protection area was submitted to and approved by EGLE drinking water division.

Supply Well Abandonment, Wright Patterson Air Force Base, U.S. Air Force/USACE, Dayton, OH

Abandoned two former water supply wells discovered during other construction activities at Wright T Patterson Air Force Base. Duties involved evaluating work plans, conducting meetings with the USACE and the project team, and working with contractors to confirm the work plan was properly implemented.

Property Transaction Phase II ESAs, Large Appliance Manufacturer, Various Locations

Collected soil and groundwater samples at multiple properties in Michigan, Ohio, Illinois, Iowa, and West Virginia, to assess potential environmental concerns identified during Phase I ESAs. Data were used to assist with property acquisition decisions and/or determine reserves to address liability abatement. The projects were completed within short time frames using local contractors and staff.

Soil Assessment and RCRA Unit Closure, Large Food Producer, Napoleon, OH

Conducted initial soil screening to determine whether former land use practices caused contamination and performed expedited site investigation to delineate and characterize waste residues identified near a former dumping area. Completed a RCRA closure plan and remediation feasibility study for site closure, and implemented corrective actions using excavation and onsite treatment by thermal desorption and offsite disposal at a licensed waste handling facility.

Soil and Groundwater Investigation, Automotive Component Supplier, Whitmore Lake, MI

Conducted a subsurface investigation to delineate a trichloroethylene plume and identify source areas. Worked with the client, state regulators, and the property owner to identify additional source areas and develop acceptable scope of work and options for corrective measures and identify acceptable water sources for future site redevelopment.

Groundwater Resource Assessment, Bottled Water Provider, Van Zandt, TX

Conducted a water resource investigation to evaluate and develop a spring supply source in rural Van Zandt County, Texas. Conducted exploratory drilling; aquifer pumping tests; well capacity evaluations; and final well design, permitting, and installation for public water-supply wells for bottled water use. Also conducted groundwater quality analyses to demonstrate hydraulic connections to springs.

Chlorinated Hydrocarbon Plume Investigation, Automotive Component Supplier, Flint, MI

Oversaw multiphase investigation to determine the nature and extent of a chlorinated VOCs groundwater plume under multiple industrial properties in Flint, Michigan. The investigation included the delineation of VOCs distributed in two connected aquifer systems, and field tests to evaluate options for interim remedial measures.

Vinyl Chloride Feasibility Study, Private Developer, Roseville, MI

Investigated the extent of vinyl chloride in deep groundwater wells identified during compliance monitoring activities and verified soil remediation effectiveness. Conducted monitored natural attenuation sampling and other biochemical evaluations to prepare a work plan for an enhanced bioremediation corrective action at the site.

Aquifer Evaluation, Bottled Water Provider, Columbia Township, MI

Performed aquifer testing to determine sustainable yield for a large new capacity well for a bottled water supplier. Managed the installation of a new supply well, prepared documents to verify the aquifer was a spring source, and obtained a permit from the state of Michigan to operate the facility for public water supply production. Installed automated water-level gauging equipment and other apparatus to allow long-term monitoring of the well field. Prepared geological and engineering documents to help client obtain certification to sell bottled water from this location in other states. Also conducted hydraulic and groundwater chemistry studies to verify the sources of bottled water could be classified as a spring per federal regulations. Performed microbiological source water assessments to demonstrate source wells were not under the direct influence of surface water or susceptible to surface contamination.

Groundwater Remediation, County Road Commission, Rock, MI

Conducted a remedial investigation and feasibility study and developed a remedial action plan for a gasoline release from LUSTs. Gasoline entered a fractured dolomite aquifer and contaminated several private supply wells. Site characterization involved surface-cased drilling, surface and down-hole geophysical surveys, soil gas surveys, and indoor vapor monitoring. Installed a free-product recovery system and total fluids extraction system and wrote an ordinance to provide an institutional control on drinking water wells.

Soil and Groundwater Study, Manufacturing Plant, Michigan City, MI

Investigated aromatic and chlorinated hydrocarbons in soil and groundwater between an industrial plant and the Grand River. Used approximately 50 direct push probes to characterize and screen soils, as well as collect soil and groundwater samples to determine the nature and extent of petroleum, solvent, and metal contamination.

Groundwater Study, Industrial Manufacturer, Lansing, MI

Assisted PRP with a CERCLA investigation related to ammonia contamination within Lansing's primary drinking water aquifer. Used packers and submersible pumps to collect groundwater samples from discrete-depth intervals from within municipal wells completed in fractured bedrock. Data were used to negotiate a scope of work and determine costs for investigation activities with USEPA and EGLE, and later as backup for negotiations with other PRPs for cost sharing.

Chloride Investigations, Wastewater Treatment Plants, Genoa & Osceola Townships, MI

Conducted extensive remedial investigations at three sewage treatment plants that discharged treated water to rapid infiltration basins under Part 22 groundwater discharge permits. Chloride and sodium concentrations in groundwater exceeded regulatory limits, necessitating investigation activities under state-directed consent orders. The investigations included deep borings with vertical chemical profiling, monitoring well installation, aquifer testing, and offsite plume tracking. The extent of chloride in

groundwater was delineated to EGLE's satisfaction, and the source was abated by redirection of softener backwash to dispersed dry well discharges.

Well Field Study, Municipality, Brighton, MI

Conducted a hydrogeological investigation to select a new well site and evaluate the safe yield for a new supply well for the city. The new well ultimately yielded 1,800 gpm. The investigation included a 72-hour pumping test and preliminary contaminant source inventory for use in the wellhead protection plan.

New Well Field Development, Municipality, Petoskey, MI

Conducted a hydrogeological study to identify a usable aquifer in a previously undeveloped deep limestone formation. Identified a high-yield production zone with good quality water at depths of 300 to 400 feet. Installed test wells, conducted down-hole geophysical logging, and performed long duration pumping tests to evaluate surface water interaction with the wells. Completed a contaminant source inventory and initiated wellhead protection area delineation for the new well field.

Michigan Contaminant Inventory, Municipality, Milan, MI

Obtained existing well performance and geological data, and conducted a contaminant source inventory for use with a wellhead protection plan. Additional well testing and aquifer modeling were used to complete the wellhead protection area delineation.

Well Field Study and Permit, Municipality, Bessemer, MI

Identified site for a new production well in a previously undeveloped fluvial aquifer system. Conducted a preliminary contaminant source inventory and developed well construction specifications based on geological research and well log evaluations. Negotiated a work plan with EGLE to evaluate aquifer safe yield. The new production well was subjected to a 30-day pumping test and extensive hydrogeological evaluation to prove sustainability, and a permit was issued based on study findings.

Aquifer Testing, Municipality, Genoa Township, MI

Conducted investigation to identify potential aquifer materials and locate a test well for potential water system development. Conducted a contaminant source inventory to place new wells away from known sources of contamination. The test well supplied more water than expected and provided the township with leverage for negotiating favorable conditions with outside water providers.

Water Withdrawal Impact Assessment, Private Developer, Saline MI

Assisted a private developer with well location, aquifer testing, and water quality evaluations. Addressed concerns of EGLE and residents relating to the effect of the new well on a nearby landfill and on local private household well yields.

Wellhead Protection Area Delineation, Municipality, Manchester, MI

Performed field tests and regional water-level measurements to delineate the village's wellhead protection area. Helped the village complete a potential contaminant source inventory and update its water supply contingency plan.

Ave Maria International Golf Club Aquifer Capacity Study, Private Developer, Ann Arbor Twp., MI

Investigated aquifer capacity and potential well interference effects associated with the proposed development of a golf course and housing development. The study convinced the township board that

the golf course development could be completed with no adverse environmental or hydrogeological effects resulting from the development's water use. The project was later abandoned and moved to Florida due to local political opposition.

Contaminated Soil Excavation, Manufacturing Plant, Byesville, OH

Conducted a subsurface soil and groundwater investigation to characterize chromium-contaminated soils, recommended corrective action, and submitted a final report to the Ohio Environmental Protection Agency recommending remediation by excavation.

EMPLOYMENT

Environmental Resources Group, LLC. (Senior Project Manager), 2021 to Present
Environmental Consulting & Technology, Inc. (Senior Scientist III), 2016-2021
Fishbeck, Thompson, Carr & Huber, Inc (Senior Geologist), 2015-2016
Superior Environmental, Inc., (State Contract Coordinator), 2014-2015
Gannett Fleming of Michigan, Inc. (Regional Office Manager, Vice President), 2009-2014
Earth Tech / AECOM (Senior Project Manager), 2006-2009
Haley & Aldrich of Michigan, Inc. (Senior Project Manager, Department Manager), 2003-2006
McNamee, Porter & Seeley, Inc./Geo Trans, Inc./Tetra Tech, Inc. (Senior Hydrogeologist), 1994-2003
Delta Environmental Consultants, Inc. (Senior Project Manager, Department Manager), 1987-1994
Nebraska Department of Health (Groundwater Geologist), 1985-1987

PROFESSIONAL AFFILIATIONS

American Institute of Professional Geologists – past Secretary, Treasurer, Vice President, President, and past-President.
Michigan Association of Environmental Professionals.



PHILLIP A. PETERSON
SENIOR PROJECT MANAGER

EDUCATION

B.S., Geology, Michigan State University, East Lansing, Michigan, 1987

PROFESSIONAL EDUCATION/ACCREDITATIONS

Asbestos Fiber Counting (NIOSH 582 Equivalent), February 1988

40-Hour Hazardous Waste Operations (Hazwoper) Initial Training, March 1994

Conducting Effective Indoor Air Quality Investigations, July 1997

Confined Space Entry Training for Attendant, Entrant and Supervisor, February 2005

Michigan Accredited Asbestos Building Inspector, Project Designer and Management Planner,
June/October 2022

Additional training, accreditations and certifications are too numerous to list here.

PROFESSIONAL EXPERIENCE

INDOOR ENVIRONMENTAL ASSESSMENT

- **Pre-Renovation and Pre-Demolition Potentially Hazardous Materials Inspections, Project Design and On-site Air Monitoring with Project Oversight, Various Sites across MI** – Performed sampling, project design, abatement oversight and air sampling at commercial, educational, religious, industrial and institutional sites across Michigan. Structures ranged in size from 894 square feet to 1.2 million square feet.
- **Industrial Hygiene, Indoor Air Quality, Sick Building Syndrome Evaluations, Various Sites across, Michigan** – Investigator and Project Manager responsible for workplace exposure assessments, Indoor Air Quality Evaluations, Sick Building Syndrome Evaluations, Odor Evaluations and Methamphetamine Evaluations. Sampling pursuant to established protocols and analysis and interpretation of laboratory data with preparation of detailed written reports.
- Performed PLM, PCM and impaction sample (mold in air) analysis and supervise the NVLAP accredited PLM lab of ERG.

EMPLOYMENT

Environmental Resources Group, LLC (Senior Project Manager), Lansing, Michigan

01/2021 – present

Fibertec Industrial Hygiene Services, Inc. (Vice President), Lansing/Holt, Michigan

3/1998 – 12/2020

WMI Environmental Service, Inc. (Operations Manager/Industrial Hygienist), Kalamazoo, Michigan

01/1994-3/1998

Fibertec, Inc. (Operations Manager/Industrial Hygienist, East Lansing, Michigan

1/1988-1/1994



MALA C. HETTIARACHCHI, PhD, PE
SENIOR ENGINEER

EDUCATION

Ph.D., Environmental Engineering, University of Calgary, Canada, 2005
M.S., Water Resources Engineering, Asian Institute of Technology, Thailand, 2001 (Received *Hodaka* award for the best graduating student, Water Resources Engineering)
B.S., Civil Engineering (first class honors), University of Moratuwa, Sri Lanka, 1999

CERTIFICATIONS

Professional Engineer, Michigan – 6201056664
Professional Engineer, New York – 103641-01

PROFESSIONAL EDUCATION COURSES

40-Hour Hazardous Waste Site Activities Initial Health and Safety Training,
8-Hour Health and Safety Refresher

RESEARCH EXPERIENCE AND PROPOSALS SUBMITTED

Health Impacts of PFAS, CURES Research Project, Wayne State University, MI
— Principal Investigator - Decoding PFAS Exposure in Cancer Initiation and Progression. The pilot Research project was funded in August 2019 by CURES – Wayne State University.

Use of High-Frequency Ultrasound for Mineralization of Per- and Polyfluoroalkyl Substances (PFAS) in Concentrated Waste Stream
— Co-Principal Investigator – Submitted a proposal to National Science Foundation. The research has been proposed by the New Jersey Institute of Technology (NJIT) to the NSF for funding under the Division of Industrial Innovation and Partnerships (IIP). – Wayne State University

PROFESSIONAL EXPERIENCE

WATER/WASTEWATER/EMERGING POLLUTANTS/LANDFILLS

Related Computer Skills: Hydrological, hydraulic and groundwater modeling using MIKE-NAM; MIKE-11; HEC-RAS; HEC-HMS; SWMM; SEEP-W; MODFLOW

Leachate Management Strategies and PFAS Removal, Arbor Hills Landfill, Northville, MI

— Provides consulting services in developing and implementing sustainable leachate management strategies and structural controls to reduce/remove compatible pollutants, priority pollutants and emerging pollutants such as PFAS. The technologies implemented includes aeration, dissolved air floatation (DAF), coagulation and flocculation, chemical oxidation, adsorption to granular activated

carbon and ion exchange; provides consulting services for odor mitigation; provides compliance services with respect to leachate; provides consulting services in obtaining NPDES permits (or permit modifications) to discharge stormwater and/or treated landfill leachate.

PFAS Removal from Impacted Wastewater Sludge, Wixom WWTP, Wixom, MI

— Provides consulting services in removing PFAS from approximately 1 million gallons of PFAS impacted sludge. Developed strategies for discharging the treated water under the existing NPDES permit. The PFOS concentration was reduced from approximately 30,000 ppt to 5 ppt.

Site Characterization - PFAS, Arbor Hills Landfill, MI

— Conducted a comprehensive stormwater characterization to identify on-site and offsite sources of PFAS. Evaluated the status of stormwater infrastructure that were contaminated with historical AFFF wastewater and the migration of PFAS. Over 350 samples of water and soil were obtained and analyzed for PFAS during this study. Recommendations for remediation and further monitoring were provided upon completion of the Short-Term Stormwater Characterization Study to manage the discharge of PFAS containing stormwater into the receiving surface water body.

Leachate Management Strategies and Odor Mitigation, Ontario County Landfill, Stanley, NY

— Provides consulting services in evaluation leachate quality for future leachate treatment purposes; provides consulting services in mitigating odor at lift station and leachate storage lagoons via structural controls.

PFAS Remediation, Waterford Landfill, MI

— Provided design and evaluation services to install and remediation system with coal-based activated carbon adsorption system and an ion exchange resin polishing vessel to remediate PFAS.

Technology and Regulatory Upgrades, Stadtentwässerung Dresden GmbH, Dresden, Germany

— Completed an alternative sewage sludge or biosolid disposal technology review and evaluated the environmental concerns of biosolid land application. Evaluated phosphorus (P) recovery technologies from: sewage sludge ash (e.g., Ash-Dec); dried/dewatered sludge; sludge liquor (e.g., Ostara). Prepared a report summarizing micropollutants removal methods including traditional methods such as Fenton-based processes and ozonation and advanced oxidation processes (AOPs) such as photochemical methods, non-photochemical processes, electro-Fenton and photo-electro-Fenton processes and combinations such as ultrasound/UV/TiO₂, thermal methods, adsorption, and membrane filtration. Conducted a comprehensive literature review to determine sources, fate and transport, bioavailability, sampling methods, monitoring techniques and removal technologies of microplastics (i.e., plastic fragments smaller than 5 mm). Evaluated tertiary and advance wastewater treatment options to remove very small microplastics from wastewater effluent. Assisted in designing a 4P public campaign.

Smiths Creek Bioreactor Landfill, St. Clair County, Michigan

— Analyzed landfill monitoring data. Performed analysis of settlement profiler data from the bioreactor cell to aid in settlement modeling, predicting air-space gain, and evaluating performance of enhance biodegradation (i.e., leachate recirculation and pre-mix of MSW with sewage sludge). Developed a OneTrack compliance systems for surface water quality of Smiths Creek and Wolvin Canal, groundwater quality, and leachate quality monitoring. Developed spreadsheets to automate data handling and analysis.

Pine Tree Acres Landfill, Lenox, Michigan

— Assisted in preparing permits. Reviewed hydrogeological reports and environmental reports. Evaluated groundwater control alternatives for expansion purposes.

Methane Biofilters, TransCanada Pipelines, Calgary, Canada

— Developed design guidelines and monitoring protocols to implement methane biofilters to

treat point source methane emissions at oil and gas metering stations/oil well sites in Alberta, Canada. Developed a numerical model to predict gas, heat, unsaturated moisture transport and methane oxidation in methane biofilters. Performed pilot testing, laboratory experimentation, and data analysis to aid in full scale application and calibrating the numerical model.

City of Calgary Landfill Bio-Cell, Calgary, Canada

— Designed/evaluated landfill hydrology, leachate collection and removal systems, leachate recirculation systems, and liner and cover systems. Modeled contaminant transport through landfill Liners. Analyzed landfill gas generation. The landfill gas is being used to generate renewable energy. This project received the CEA Award of Excellence and it was praised as “forward thinking at its best”.

Multiple landfills, City of Calgary, Canada

— Characterized of municipal solid waste (MSW) and seasonal MSW generation in Alberta, Canada. Performed mathematical modeling of methane oxidation in landfill final cover soil. Developed a simulation template to manage/reduce construction waste.

Groundwater Surface Water Interface Investigations, Multiple Sites, MI

— Conducted several Groundwater Surface Water Interface Investigations to assist site remediation. The tasks include flow and transport modeling, site assessments, hydrological analysis.

Lanka Hydraulic Institute, Sri Lanka

— Conducted drainage studies, hydrological and hydraulic studies using models such as MIKE-NAM, MIKE 11 and MIKE 21. Investigated and model the saline water intrusion into two rivers; worked with experts in water resources engineering from Danish Hydraulic Institute regarding hydraulic modeling.

Asian Institute of Technology, Thailand

— Conducted research to investigate the mixing of reservoir due to large rapid flows. A correlation of the flow rate and the Froud Number was developed.

Wastewater Management, Multiple Agricultural Projects, MI, OH, IN

— Conducted flood plain analysis, hydraulic evaluations to determine the floodplain impacts, design reviews of hog barns per NRCS 313 for Confined Animal Feeding Operations (CAFO), process wastewater and manure management and design.

City of Ann Arbor, Michigan

— Investigated the collapse of AquaSwirls installed at West Park in Ann Arbor. This investigation included the review of reports regarding structural stability, construction of AquaSwirls, installation, operation and testing.

Great Lake Water Quality, Delta Green Purchase Consortium, Chicago, Illinois

— Conducted a comprehensive literature review on ingredient in institutional cleaning products and appearance of cleaning products in waterways of Great lakes on behalf of Delta Green Purchase Consortium and prepared a report.

Evaluation of Biogas Upgrading Technologies, Stadtentwässerung Dresden GmbH, Dresden, Germany

— Evaluated biogas upgrading technologies and assessed the feasibility of upgrading a part of biogas to biomethane and distributing via an onsite fast filling station. The wastewater treatment plant currently sends biogas to a combined heat and power (CHP) plant.

PFAS remediation, Waterford Landfill, MI

— Provided design and evaluation services to install and remediation system with coal-based activated carbon adsorption system and an ion exchange resin polishing vessel to remediate PFAS.

REMEDIATION/SITE CHARACTERIZATION

Remedial Investigation/Feasibility Study (RI/FS), Berry's Creek Superfund Site, New Jersey

— Performed surface water sampling, sediment sampling, hydrodynamic data collection, surface water quality and sediment data analysis, preparation of reports. Contributed in the preparation of Work Plan and Quality Assurance Project Plan. Provided project management assistance on weekly/monthly project, budget, and invoice tracking. The RI/FS has been conducted with a USEPA-approved Work Plan. The purpose of the RI is to identify the nature and extent of contamination in the Berry's Creek Study Area and potential human and ecological risks posed by the contaminants. The study area included the Berry's Creek and approximately 12 square miles of marshes.

Groundwater Flow and Contaminant Transport Analysis, Inveys Spring Valley Site, Illinois

— Developed a spreadsheet model to generate remediation objectives based on Illinois Tiered Approach to Corrective Action and analyzed groundwater flow and contaminant transport characteristics.

Soil and Groundwater Remediation, All Steel State Superfund Site, Montgomery, Illinois

— Performed pilot testing of a dual phase extraction (DPE) system including monitoring, data analysis. Contributed in designing and implementing a full-scale DPE, preparing air permit application, sampling schedule and execution. The site was contaminated with large volumes of petroleum products and the source and the groundwater plume were located underneath a large operating warehouse. DPE was selected to shorten the cleanup time at the site.

Soil Remediation, Peter's Cartridge Superfund Site, Ohio

— Prepared RI/FS report to remediate the contaminated soil. Analyzed soil contamination data and remedial alternatives. The total area of the site is about 70 acres. The site is located along the south valley wall of the Little Miami River and was historically occupied by a munitions manufacturing facility.

Soil Remediation, Carus Superfund Site, Illinois

— Estimated cut and fill volumes for slope stabilization purposes of this approximately 160-acre large site located along the Little Vermillion River. Prepared a spreadsheet to automatically calculate cut and fill volumes based on select slopes and soil contamination. Slope stabilization had been proposed as a part of the soil remediation process to eliminate heavy metal transport to the river due to erosion. Investigated appropriate areas to build a containment cell to dispose contaminated soil. The site soil is contaminated with metals due to former smelting and rolling operations of the Matthiessen and Hegeler Zinc Co.

Underground Storage Tank Removal Oversight and clean up – Multiple Sites, IL, IN, MI, OH

— Performed UST removal oversights, closure sampling, initial investigations, closure investigations. Prepared UST initial assessment reports and closure reports. Contributed in remedial option evaluations for LUST sites.

Sediment quality analysis, St. Louis River/Duluth Harbor, Duluth, Minnesota

— Validated and analyzed analytical data to evaluate sediment quality and risk to benthic communities using parameters such as mean probable effect concentration quotients (mean PEC-Qs), MN Level I and Level II SQTs, equilibrium partitioning sediment benchmark (ESB) toxic units, dioxin toxicity equivalent concentrations, etc. Prepared MS Access database with analytical data to upload on to NOAA Query Manager regional database. More than 260 sediment core samples were collected from the St. Louis River Area of Concern (AOC) during this study.

LIF UVOST Subsurface Investigations, Multiple Locations

— Conducted Subsurface investigations using Laser Induced Fluorescence (LIF) technique (using Ultraviolet Optical Screening Tool, UVOST) at multiple sites with subsurface petroleum product contamination. Performed three-dimensional visualization of LIF data.

DUE DILIGENCE

Multiple projects, Various locations

— Conducted several Phase I and Phase II Environmental Site Assessments (ESA). Prepared Phase I and Phase II ESA reports, Michigan Baseline Environmental Assessment reports, and Due Care Plans. Conducted several Project Area Contamination Surveys on behalf of Michigan Department of Transportation, preliminary site investigations and prepared due care plans.

EMPLOYMENT

Assistant Professor (Adjunct), Wayne State University, Detroit, Michigan.

01/2019-Present

Somat Engineering, Inc. (Project Engineer)

Aug-Oct 2016; 2014-2015 (As needed); 2011 to 2013;

Stadtentwässerung Dresden GmbH, Dresden, Germany (Research Staff)

2014-2016

CTI and Associates, Inc., (Project Engineer)

2010-2011

Geosyntec Consultants (Senior Staff Engineer)

2008 to 2010

University of Calgary, Canada (Post-doctoral Research Associate)

2005 to 2008

Asian Institute of Technology, Thailand (Graduate researcher)

1999 to 2001

Lanka Hydraulic Institute (Research Engineer)

1998 to 1999

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

Environmental and Water Resources Institute (EWRI)

Air and Waste Management Association (A&WMA)

Michigan Water Environment Association

Board Member, Society of American Military Engineers – Detroit Post

PROFESSIONAL SERVICE

Reviewer: ASCE Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, 2005 – Date

Reviewer: International Journal of Environmental Engineering, 2006 – Date

Reviewer: Waste Management, 2008 – Date

Reviewer: Geocongress 2012

PUBLICATIONS

1. Fernandez-Valdivia, R. Hettiarachchi, M.C., Miller, C. (2019). Decrypting PFAS Inductive Role in Breast and Lung Carcinogenesis. Poster Presentation, GLIIFCA.
2. Hettiarachchi, M.C., Reichenbach, R.C.R., Barrows, G. (2019). A Case Study on PFAS Removal from Landfill Leachate: Waterford Hills Landfill. 2019 9th Annual AIPG Michigan Section Technical Workshop.
3. Mala C. Hettiarachchi. (2019). Sources of Microplastics to the Great Lakes: Wastewater Treatment Plants. Michigan Water Environment Association. January 2019.
4. Hettiarachchi, M.C., Hentze, M., Barth, M., and Germane, M.J. (2018). An Overview of the Sources of Microplastics to the Great Lakes: Wastewater Treatment Plants. 28th Annual No-Spills Conference, January 3-5, 2018, Michigan.
5. Zwald, R.J., Hettiarachchi, M.C., and Kinsman, L. (2017). An Overview of the Site Characterization and LNAPL Mass Reduction: Memphis Shell LUST Site. 7th Annual AIPG Michigan Section Technical Workshop, Michigan.
6. Hettiarachchi, M.C. and Germane, M.J. (2017). An Economical Method to Install Industrial Wastewater Storage Pond Liners. Waste to Worth 2017. Raleigh, North Carolina
7. Hettiarachchi, M.C. and Mein, D.R. (2013). Characterization of Sediment from Duluth Harbor Area Using Laser Induced Fluorescence Technique. Proceedings of Battelle's Sediment Conference, Dallas, Texas. (Presented by Hettiarachchi).
8. Hettiarachchi, M.C. and Mein, D.R. (2013). Assessment of Sediment Quality: Mean Probable Effect Quotients (poster presentation). Battelle's Sediment Conference, Dallas, Texas.
9. Hettiarachchi, V.C., Hettiaratchi, J.P.A., Mehrotra, A.K., Kumar, S. (2011). Field-Scale Operation of Methane Biofiltration Systems to Mitigate Point Source Methane Emissions. Environmental Pollution. 159(6), pp 1715-20.
10. Hettiarachchi, V., Foye, K., and Zhao, X. (2012). Use of Settlement Profilers in a Full-Scale Bioreactor Landfill. GeoCongress 2012, pp 4194-4201.
11. Hettiarachchi, V.C., J.P.A. Hettiaratchi, and A.K. Mehrotra (2011). Field-Scale Operation of Methane Biofiltration Systems to Mitigate Point Source Methane Emissions. Environmental Pollution. 159, pp 1715-1720.
12. Hettiarachchi, V.C., J.P.A. Hettiaratchi, A.K. Mehrotra, and G. M. Gibbons (2009). Mitigation of Anthropogenic Methane Emissions: Methane Biofiltration. Air and Waste Management Association Conference, Detroit, June 2009.
13. Hettiarachchi, V.C., J.P.A. Hettiaratchi, and A.K. Mehrotra (2007). A comprehensive one-dimensional mathematical to simulate gas, heat, and moisture transport in methane biofilters. ASCE Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, 11(4), pp 225-233.
14. Chandrakanthi, M. and J.P.A. Hettiaratchi (2007). Performance of field-scale methanotrophic biofilters (MBFs) used to control point-source methane emissions: a numerical modeling approach. Monograph series - Landfill Modeling, CISA Publisher, Italy, ISBN 978-88-6265-001-4.
15. Chandrakanthi, M., A.K. Mehrotra, and J.P.A. Hettiaratchi (2005). Thermal conductivity of leaf compost used in biofilters: An experimental and theoretical investigation, Environmental Pollution, 136(1), pp 167-174.

16. Hettiaratchi, J.P.A., M. Chandrakanthi, M.D.N. Perera, D. Davies, J. Hundal, and D. Van Everdingen (2005). Calgary Biocell: Design and construction of an innovative landfill cell in cold climates. Proceedings, Annual Conference- Canadian Society for Civil Engineering, pp EV-179-1-EV-179-9.
17. Hettiaratchi, J.P.A., V.B. Stein, D. Pokhrel, and M. Chandrakanthi (2003). Operation of Landfill Bioreactors, or Leachate Re-circulation Landfills, in Cold Climates. 8th CSCE Environmental and Sustainable Engineering Specialty Conference. Moncton, New Brunswick, Canada.
18. Chandrakanthi, M., J.P.A. Hettiaratchi, G. Achari, V.B. Stein, L.A.K. Perera, and M.D.N. Perera (2003). Application of Mathematical Models in Predicting Flow and Reactive Behavior of Methane in Landfills. SARDINIA 2003, 9th International Waste Management and Landfill Symposium, Cagliari, Italy.
19. Hettiaratchi, J.P.A., D. Pokhrel, and M. Chandrakanthi (2003). A novel approach to control atmospheric methane emissions from low-volume point sources and diffused area sources. Proceedings, Annual Conference - Canadian Society for Civil Engineering, pp 511-518.
20. Chandrakanthi, M., J. Ruwanpura, J.P.A. Hettiaratchi, and B. Prado (2002). Optimization of Waste Management for the Construction Projects Using Simulation. Winter Simulation Conference, San Diego, California, Conference proceedings, Vol. 2, pp 1771-1777, ISBN 0743-1902.
21. Luketina D. A., M. Chandrakanthi, and D. Hranisavljevic (2002). The Water Quality Impact of Large Rapid Reservoir Inflows, IWA-Melbourne, Australia.

EDUCATION / CERTIFICATIONS

B.S., Fisheries & Wildlife Sciences, Michigan State University, 1992
Juneau Icefield Research Program, University of Idaho, 1987
Heartsaver First Aid & CPR AED Certified

PROFESSIONAL EDUCATION COURSES

- OSHA 40 hour (29 CFR 1910.120) – Hazardous Waste Operations (HazWoper), 1993
- Annual 8-Hour HazWoper Refresher Courses
- 8-Hour Supervisor, Hazardous Waste Operations and Emergency Response Course
- PFAS in Michigan Workshop, American Groundwater Trust, 2018
- ATC Associates Inc., Electrical Systems and Safety Training Certifications Level 1 through 3, 2011
- ASTM E1739-95: Risk Based Corrective Actions at Petroleum Release Sites, 2007
- Assessment and Remediation of Petroleum Hydrocarbons, Alpine Environmental, Inc.
- Wetlands Workshop for Local Government Officials, ERMNET, Inc.
- Advanced Technologies for Accelerated Natural Attenuation, Regenesys, Inc., 2002
- eRAILSAFE System Line Worker Certification
- CSX & CN Rail Roadway Worker Protection Contractor Safety
- US DOT – Hazardous Material Handling & Transportation, 2012
- Pipeline Awareness for Excavator Operations

PROFESSIONAL EXPERIENCE

LUST/UST/AST INVESTIGATIONS

- **State of Michigan Statewide ISID Tank and Soil Removal Program** — Project Manager for State of Michigan orphan underground storage tank (UST) and impacted soil removal program. Environmental Resources Group, LLC (ERG) was retained by the Michigan Department of Technology, Management and Budget (DTMB) to assist with the removal of sources of contamination associated with releases from former UST systems and other contaminant sources at multiple sites across the State. I have been the Senior Project Manager and provided oversight of more than 12 UST removal / impacted soil removal projects. Duties included preparing contract schedules, budgets, work plans, and site specific health and safety plans for each project prior to commencement of work. I provided direct oversight during the removal of USTs and impacted soils and completed verification sampling during the soil removal projects. Once completed, I oversaw the completion of reports, including construction summary reports and required Site Assessments reports and documentation to the State's Licensing and Regulatory Affairs (LARA), Bureau of Fire Services (BFS) Division. Additionally, as part of some projects, design and installation of soil gas sampling points and groundwater monitoring wells was included in the Scopes of Work. Directed the ongoing sampling programs for both soil gas and groundwater as part of the contracts.

- **State of Michigan Statewide ISID Tank and Soil Removal Program** — Project Manager for State of Michigan orphan underground storage tank (UST) and impacted soil removal program. Environmental Resources Group, LLC (ERG) was retained by the Michigan Department of Technology, Management and Budget (DTMB) to assist with the removal of sources of contamination associated with releases from former UST systems and other contaminant sources at multiple sites across the State. I have been the Senior Project Manager and provided oversight of more than 12 UST removal / impacted soil removal projects. Duties included preparing contract schedules, budgets, work plans, and site specific health and safety plans for each project prior to commencement of work. I provided direct oversight during the removal of USTs and impacted soils and completed verification sampling during the soil removal projects. Once completed, I oversaw the completion of reports, including construction summary reports and required Site Assessments reports and documentation to the State's Licensing and Regulatory Affairs (LARA), Bureau of Fire Services (BFS) Division. Additionally, as part of some projects, design and installation of soil gas sampling points and groundwater monitoring wells was included in the Scopes of Work. Directed the ongoing sampling programs for both soil gas and groundwater as part of the contracts.
- **State of Michigan Statewide Expanded TRIAGE (SWET) Program** — Project Manager for State of ERG was retained by the DTMB to provide limited site investigation and sampling services on behalf of the Michigan Department of Environmental Quality (MDEQ) under their Expanded Triage Program (ETP). The SWET projects involve targeted investigations of several orphan LUST sites to determine current environmental conditions and remaining risks posed by any contamination. The limited site investigation activities performed by ERG included geophysical and subsurface drilling as well as soil and groundwater sampling activities performed in accordance with a workplan prepared for and approved by the MDEQ for 17 orphan LUST sites in the Kalamazoo, Michigan District area. Upon completion of the field work, ERG provided the SWET program coordinator and district project managers with a summary report of each site's investigation activities.
- **State of Michigan ISID Environmental Services Contract -Zephyr Naph-Sol Refinery Site - Muskegon, MI** — Senior Project manager for State of Michigan contract – providing budgets, bid specifications, waste treatment plans, and work plans for the oversight of the in-situ remediation soil stockpiles containing hazardous concentrations of lead. Once the stockpiles were treated, worked with Type II landfill to accept the soils as special waste, saving the State of Michigan significant funds versus disposal as hazardous waste. Activities also included air quality monitoring during soil mixing and mobilization and incremental soil sampling following the in-situ mixing of a binding agent to the lead-containing soil piles.
- **State of Michigan ISID Environmental Services Contract -Former Leaking UST Site – Grand Rapids, MI; 2017-2021** — Senior Project manager for State of Michigan contract – providing budgets, bid specifications, remediation designs, and work plans for a former orphan waste oil UST site that had impacted the soil gas beneath the current site building and adjacent off-site building. The Scope of Work included a soil, groundwater, and soil gas investigation. Based on the results of the investigations, chlorinated hydrocarbons were found to be present beneath the on-site and adjacent off-site building structures. ERG designed and oversaw the installation of a sub-slab depressurization system (SSD) beneath the off-site structure to achieve lower sub-slab air pressure relative to indoor air pressure by use of a fan-powered vent drawing air from beneath the slab. The SSD system was shown to provide total coverage beneath the off-site structure to capture and mitigate the chlorinated hydrocarbon soil gas plume. The control of the system was turned over to the property owners in September 2021.

- **Underground Storage Tank System Design & Installation / Grand Rapids, Michigan Area School System** – Following the removal and closure of the school system's transportation facility underground storage tank (UST) system, oversaw the design, permitting and construction bid letting and management of the new fueling station for the school transportation center.
- **Underground / Aboveground Storage Tank System Design & Installation** – Oversaw the design, permitting and construction management of underground and above ground storage tank system installations at institutional settings for school transportation center and county emergency sewer lift station facilities.
- **LUST Response Investigation and Remediation / Retail Petroleum Clients throughout Michigan and other states, including Kentucky, Virginia and New Hampshire** — Project Manager for LUST projects, including removal and in-place closures, contaminant delineation, and remediation in accordance with Risk-Based Corrective Action (RBCA) procedures. Implemented the investigation, delineation and remediation of phase separated, adsorbed, and dissolved phase hydrocarbon plumes from the release of gasoline and diesel fuel at retail petroleum facilities. Remedial strategies designed and implemented in response to these LUST projects have included traditional groundwater pump and treat systems, soil vapor extraction, air sparging, and in-situ bioremediation utilizing oxygen releasing compounds.
- **LUST Response Investigation and Remediation, Multi-Phase Free Product Recovery System Design and Installation / Retail Petroleum Client / Battle Creek, Michigan** - Following the catastrophic release of approximately 9,000 gallons of unleaded gasoline from a leaking UST adjacent to a residential neighborhood with potable drinking water wells, I was the Project Manager who interfaced with the client's insurance carrier, their consultant and the Michigan Department of Environmental Quality to take over the project in a timely manner to alleviate the immediate danger to the residential population down gradient of the release location. Beginning in July 2007, designed and oversaw the installation of various free product recovery and treatment systems for mass free phased product recovery. The systems included the use of product skimming pumps, vacuum enhanced fluid recovery utilizing vacuum truck technologies, and 2 mobile multi-phase recovery systems that utilized catalytic thermal oxidation in addition to free phase recovery. Between July 2007 and September 2008, a total of 5,423 gallons of free phase product was recovered. Additionally, based on calculations, 1,301 gallons of vapor phase free product were processed and treated using catalytic oxidation methods. The free phased product was significantly recovered and no confirmed impact to the surrounding potable drinking water wells was detected.
- **LUST Response Investigation and Remediation / Retail Petroleum Client New Hampshire** - Interfaced with the New Hampshire Department of Environmental Services to secure the approval of the first in-situ bioremediation programs utilizing oxygen releasing compounds in the state of New Hampshire. The remedial design strategies involved the injection of oxygen releasing compounds into the petroleum impacted subsurface using direct push and injection technologies, which resulted in the closure of two sites within less than one year of remedial implementation and subsequent performance monitoring.

EMERGENCY RESPONSE SERVICES

- **Emergency Response Train Derailment - Wyoming, Michigan; 2018-2020** – Project manager overseeing the environmental cleanup resulting from the release of approximately 2,000 gallons of diesel fuel onto the ground surface from a train derailment in February 2018. Two (2) diesel locomotives derailed along a washed out section of railroad bedding and track. Due to the flood waters and ground slope, diesel fuel flowed toward and into an unnamed municipal drain (creek), which flows north approximately 0.375 miles prior to entering Plaster Creek. Due to the impact to the waterways, I worked with the railroad operator, cleanup contractors, State regulators, and off-site impacted property owners to secure access for further cleanup actions within the unnamed municipal storm drain. Part 301 Inland Lakes and Streams Act Joint permit applications were prepared to complete the required cleanup activities within the regulated water body. I also interfaced with EGLE to ensure all cleanup activities are completed in accordance with Parts 31 and 201 of NREPA. Following the initial emergency response actions, ERG oversaw the excavation and disposal of approximately 700 tons of impacted soils and an additional 2,800 gallons of impacted soils mixed with water from February through June 2018. These efforts lessened the treat of impact for surface waters by cleaning and restoring the impacted stream bed for the tributary drain channel and excavating a product source location.

Groundwater monitoring wells were also installed at the site to monitor for the potential mobilization of contaminants that may remain post-remediation. Sampling events were conducted at the site to verify whether there were impacts to the groundwater. Based on the laboratory analytical results, the diesel release was substantially remediated and had not affected the groundwater at the site. Only minimal concentrations of contaminants of concern remain, however these may partially be remnants of historic railroad activities in the area and have not affected the nearby surface waters within the municipal drain channel or the tributary drain channel.

- **Emergency Response – Airplane Crash - Lansing, Michigan; 2021** – I was the Project manager contacted by the Capital Region Airport Authority (CRAA) to conduct emergency response actions following the crash of a private jet during takeoff on August 24, 2021. The initial emergency response actions and subsequent remedial actions were completed to address the release of approximately 300 gallons of Jet A Fuel from the airplane's fuel tank onto the ground surface, which subsequently caught fire due to the impact. The airport fire department put out the fire with approximately 105 gallons of aqueous film forming foam (AFFF) mixed with 8,000 to 10,000 gallons of water. The AFFF contained perfluoroalkyl and polyfluoroalkyl substances (PFAS) substances. Due to heavy rainfall the night of the crash, the fire suppression water mixed with the remnant fuel / AFFF and rainwater flowed into the airport's surface drainage system adjacent to perimeter security road and toward the Jones Branch of the Reynolds County Drain, which flows into the Grand River.

The Scope of Work included emergency response services to prevent the immediate migration of the jet fuel / PFAS impacted fire suppression water and storm water into the county drain system. Once the immediate threat to the county drain was contained, ERG oversaw the

remediation of the PFAS / jet fuel impacted storm / fire suppression water mixture and completed impacted soil removal and verification of soil remediation (VSR) sampling to document the substantial cleanup of the release(s).

ERG coordinated the response activities with the Michigan Department of Environment, Great Lakes and Energy, along with the Airport management and the Clinton County Drain Commission. Emergency response activities completed by ERG and their response contractors beginning the night of the release resulted in the recovery of approximately 9,000 gallons of runoff / rainwater containing aviation fuel and PFAS-containing AFFF. Additionally, sorbent booms were deployed adjacent to culverts assisting in the halt of fuel and AFFF into the County's Reynolds Drain system.

Following the initial emergency response actions, between late August and November 2021, ERG directed the remedial efforts as their contractors excavated and disposed of 1,336.97 tons of petroleum and PFAS impacted soils and removed an additional 8,400 gallons of impacted surface water. Impacted soils were removed from the ground surface and drainage channels along the flow path of the runoff from the crash site downstream to the confluence with the Reynolds Drain system.

Analytical results of the VSR samples revealed the response actions remediated the jet fuel release at the site to below Part 201 cleanup criteria standards. The analytical results also revealed that the majority of the PFAS impacted soils containing one (1) or more of the seven (7) regulated PFAS constituents were lessened in concentration from the remedial excavation activities. Following completion of the remedial activities, slight concentrations of various PFAS constituents remain in the soil at the site. However, it appears that of the Michigan regulated PFAS constituents (PFOS and PFOA), the majority of impact directly related to the August 24, 2021 release of AFFF has been removed from the site.

- **Additional Emergency Spill Response Investigations and Remediation / Transportation Clients throughout Michigan; 1997 – current** - Served as Project Manager and provided oversight, sampling and reporting for over 200 Emergency Response Spill Cleanup projects. The spill cleanups have typically been in response to the release of hazardous substances related to highway accidents involving trucking companies. The cleanups range from the excavation and disposal of diesel fuel impacted soils and other hazardous materials being transported by the trucking companies. The cleanups involve interfacing and coordination with the client, remediation contractors, and regulatory agencies to obtain necessary permits, including permitted highway lane closures and wetlands permits for conducting emergency response activities within regulated wetlands.

REMEDIATION/BROWNFIELDS

- **Remedial Corrective Actions, including Source Removal, Stormwater Management and Phyto-Remediation System Installation / Fertilizer Blending and Distribution Facility / Woodbury,**

Michigan; 2009 – 2011 - Project activities included the following interim corrective actions: source soil removal and off-site disposal, design and implementation of a stormwater management/infiltration barrier, and phytoremediation system installation. The corrective actions were implemented in response to a Consent Decree entered into between the former property owners and the State of Michigan as a result of historic practices and numerous documented releases across the site. My responsibilities involved assisting in the design and implementation of a phyto-remediation system to extract nutrients from the soil and vadose zone water, reduce the infiltration of surface waters through nutrient impacted soils, and reduce the quantity and improve the quality of stormwater runoff from the facility. Additionally, I interfaced with the client and regulatory agencies including multiple Michigan Department of Environmental Quality (MDEQ) divisions and county stormwater and soil erosion and sedimentation control departments to develop the work scope and ensure timely implementation of the activities. The following interim corrective action activities were completed to attenuate the nutrient impacted soils located at various locations on the site: removal and off-site disposal of approximately 6,525 tons of nutrient impacted source soils; the implementation of a stormwater management/infiltration barrier and treatment system consisting of site grade improvements to direct surface stormwater run-off into shallow vegetated attenuation pans to modulate stormwater flows and mitigate stormwater impacts; and the installation of a phytoremediation system consisting of the planting of 1,675 cuttings of various varieties of hybrid poplar and willow species over an approximate 2.5 acre area and planting of low spreading grass/forb vegetated swales and drainage ways over an additional 1.5 acre area. Over the course of 20 years, the completed phytoremediation system will have the potential to phytosequester or phytostabilize 9 tons of nitrogen and 1.05 tons of phosphorus.

- **Wastewater Lagoon Closure, Discharge Permitting and Remedial Investigation/ Poultry Processing Plant / Athens, Michigan; 1997 – 2006** - Project included the design and implementation of a Closure Plan for a wastewater treatment system's anaerobic seepage lagoon for a poultry processing plant. Prior to implementing the lagoon closure activities, designed and prepared groundwater discharge permits necessary for discharge of nutrient laden treated wastewater through spray irrigation onto agricultural lands. Prior to discharge, the wastewater was treated utilizing anaerobic digestion and a sequencing batch reactor prior to storage in a retention lagoon for photo-decomposition. In order to obtain the required discharge permit, all agricultural fields proposed for use were first "qualified" for baseline nutrient loading and available nutrient treatment capacity using spray irrigation at agronomic rates. An approved Irrigation Management Plan was then developed for the permitted discharge. As a result of the closure of the original seepage style lagoon and permitted land application of the treated wastewater, the Consent Order Decree from the Michigan Department of Environmental Quality (MDEQ) – Air Quality Division was terminated allowing the client to lessen their regulatory burden. Subsequent to lagoon closure activities, I developed and implemented a verification of soil remediation (VSR) sampling plan to ensure adequate removal of source contaminants and also directed a groundwater delineation investigation to define the extent of impact from the wastewater seepage into the shallow aquifer down gradient of the former lagoon. The results of the investigation assisted in determining the natural phyto-remediation of nitrogen compounds near a shallow surface water receptor. The level of effort required for this project involved the coordination and negotiations with the client, off-site property owners, and multiple divisions of the MDEQ, including Air Quality Division, Remediation and Redevelopment Division, Surface Water Division, and Water Bureau in order to obtain consent order decree termination,

groundwater discharge permitting, and finalization of the Remedial Investigation/Feasibility Analysis, which included a corrective action plan.

- **Wastewater Lagoon Closure, Wetland and Discharge Permitting / Beef Processing Plant / Allendale, Michigan; 2001** - Project included the design and implementation of a Closure Plan for a closed beef processing plant's wastewater treatment system lagoons. Prior to implementing the lagoon closure activities, I interfaced with the client and MDEQ regulatory divisions to design an effective closure strategy. Prior to plant closure, the wastewater treatment lagoon system treated the plant's wastewater prior to discharging into an adjacent trout stream under terms of a National Pollutant Discharge Elimination System (NPDES) permit. Compounding the lagoon closure strategy, the processing plant had received numerous correspondences from the MDEQ regulatory divisions, pertaining to exceedances in their wastewater discharge effluent to the receiving water. I assisted in the development and submittal of wetlands permits and amended the NPDES permit to allow discharge of treated wastewater during the lagoon closure activities. Following sludge removal and off-site disposal, a VSR sampling plan was developed and implemented to verify the effectiveness of the lagoon closure strategy. As a result of the lagoon closure activities, the former processing plant property was able to be transformed into a residential development. The former lagoon basins were enlarged, and converted into a small lake within the development. The level of effort required for this project involved the coordination and negotiations with the client and multiple divisions of the MDEQ, including the Remediation and Redevelopment Division and Surface Water Division in order to obtain closure approval and wastewater discharge permitting to ensure compliance with state and federal laws. As a result of the lagoon closure activities, the former processing plant property was able to be transformed into a residential development. The former lagoon basins were enlarged, and converted into small lakes within the development.
- **Remedial Investigation and Soil Removal/ Fertilizer Blending Plant / Marne, Michigan; 2005 – 2006** - Project included the design and implementation of a remedial investigation work plan and coordination/negotiations with Michigan Department of Environmental Quality (MDEQ) divisions following a fire, which destroyed the blending plant and product storage warehouse. During fire suppression actions for the fully involved fire, the fire department applied approximately 3 million gallons of water to the fire resulting in the potential spread of fertilizer compounds, particularly ammonia and phosphorus, into the subsurface. Prior to implementing a remedial strategy, I designed and directed the remedial investigation to determine the extent of impacts resulting from the fire. Based on the results of the investigation, a remedial strategy was designed which resulted in the excavation and proper disposal of approximately 8,500 cubic yards of ammonia impacted soils. Subsequent to soil removal activities, I directed and conducted VSR sampling to verify the removal of impacted subsurface soils to ensure compliance with MDEQ cleanup criteria. The level of effort required for this project involved the coordination and negotiations with multiple divisions of the MDEQ, including Remediation and Redevelopment Division and Surface Water Division.
- **Wastewater Lagoon Closure, Wetland Permitting and Reconstruction/ Beef Processing Plant / Ada, Michigan; 2002 – 2006** - Project included the design and implementation of a Closure Plan for a closed beef processing plant's wastewater treatment system lagoons. Prior to implementing the lagoon closure activities, I interfaced with the client and MDEQ regulatory divisions to design an effective closure strategy. The site's wastewater lagoons were located within a regulated floodplain, which compounded the lagoon closure strategy. I assisted in negotiations with the MDEQ's Water Bureau and Land & Water Management Divisions to allow in-place closure of the lagoon system with no off-site disposal of nutrient impacted lagoon sludge. Following lagoon

closure activities, a VSR sampling plan was developed and implemented to verify the effectiveness of the lagoon closure strategy and to demonstrate the effectiveness of allowing the dewatered lagoons to revert back to a natural wetland condition within the floodplain area. Additionally, a portion of the beef processing property had been historically filled within the site's native wetland boundaries. A work plan was developed and implemented with the MDEQ Remediation and Redevelopment Division and Land & Water Management Division to remove arsenic impacted fill soils from the area for off-site disposal. I developed and implemented a work plan under a Wetlands Permit to re-construct the wetland area following soil removal. The wetland area was re-established by planting the excavated area with native wetland seeds. As a result of the lagoon closure activities, the former processing plant property was able to be transformed into a township park. The former lagoon basins were allowed to revert into a wetland complex matching the surrounding property areas. The level of effort required for this project involved the coordination and negotiations with the client and multiple divisions of the MDEQ, including the Water Bureau, Remediation and Redevelopment Division and Surface Water Division in order to obtain lagoon closure and conduct permitted activities within a regulated wetland and the re-establishment of historic wetland boundaries.

DUE DILIGENCE

- **Environmental Site Assessments / Property Transactions throughout Michigan** - Served as project manager and provided oversight of over 200 Phase II Environmental Site Assessments (Phase II ESAs), including development of an appropriate scope of work through the completion of each project.
- **Baseline Environmental Assessments** — Completed BEAs and Due Care Plans for numerous contaminated sites in accordance with State of Michigan requirements. The BEAs were “determined” by the Michigan Department of Environmental Quality (MDEQ) to be “adequate” in limiting the new site owner's liability.
- **Environmental Due Diligence and Vapor Mitigation** — Completed due diligence and vapor mitigation at former dry cleaners in commercial center in Muskegon Michigan including installation and operation of sub-slab depressurization system in active commercial center.

OTHER ENVIRONMENTAL SERVICES & INDUSTRIAL CLEANING

- **City-Wide Stormwater Monitoring Program – Portage, MI** – Senior Project management and oversight of the several activities required under the city's NPDES stormwater permit. Such activities include regular retention basin surface water sampling, groundwater elevation monitoring events, and NPDES storm water outfall monitoring events. The project also includes the management of the city's Illicit Discharge Elimination Program (IDEP).
- **Industrial and Transportation Clients throughout Michigan** - General Manager / Account Manager of Western Michigan Operations for emergency response / industrial services provider. Generated approximately \$1 million in annual sales / gross revenue for branch while overseeing staff of 4 full time field services personnel. Successfully closed highest percentage of sales opportunities in the company, while also maintaining duties as general manager and branch operations manager.

EMPLOYMENT

Environmental Resources Group, LLC (Senior Project Manager) January 2014 - Present

Young's Environmental Cleanup, Inc. (General Manager / Account Manager – West Michigan) 2011 - 2013

ATC Associates Inc. (Project Manager) 2006 - 2011

Dixon Environmental Consulting (Project Manager / Field Services Manager) 1997 - 2006

Aqua-Terra, Inc. (Field Services Manager / Project Manager) 1993 - 1997

Mackinac Environmental Technologies (Environmental Specialist) 1992 - 1993

PROFESSIONAL AFFILIATIONS

Michigan Petroleum Association (MPA)

Michigan Association of Environmental Professionals (MEAP)

Commercial Alliance of Realtors – West Michigan

West Michigan Chapter of Air and Waste Management Association

EDUCATION

B.S., Geology, Grand Valley State University, 2002

CERTIFICATIONS

Certified Industrial and Commercial Wastewater Treatment Plant Operator Certification,
Classification B-2b and B-3b

Industrial Stormwater Certified Operator – # I-18614

PROFESSIONAL EDUCATION COURSES

40-Hour Hazardous Waste Site Activities Initial Health and Safety Training

8-Hour Health and Safety Refresher

Transportation Worker Identification Credential (TWIC) Card Holder

PROFESSIONAL EXPERIENCE

SOILS/GEOLOGICAL STUDY

Environmental Expanded Triage-MDEQ, Southwest Michigan – ERG was selected by the State of Michigan to site assessment services as part of the Michigan Department of Environmental Quality (MDEQ) Environmental Expanded Triage (EET) Program. The EET program was implemented by the MDEQ to assist with the investigation into contamination associated with the releases from former underground storage tank systems at multiple sites across the State. The goal was to gather as much on-site data in the shortest amount of time, which will allow the DEQ to prioritize these sites for future state-funded corrective action or potential site closure. Ms. Lambert conducted assessment services at 10 sites.

The field services included site reconnaissance with ground penetrating radar (GPR), the collection of soil and groundwater samples using a Geoprobe, field operation oversight and documentation and location survey.

Ms. Lambert completed the project in accordance with the aggressive timeframe. Site scheduling, including all on-site personnel and subcontractors, was coordinated in such a way to maximize efficiency and minimize mobilization costs. In addition, we used our long-standing relationships with various subcontractors to ensure a trouble-free project.

University of Michigan Stadium Expansion & Brick Tunnel Expansion

- Observed & documented all environmental activities on university property
- Soil characterization using Geoprobe for future construction and excavation -Provided oversight, support & information for all geological activity

- Manifest logging, distribution and collection of soils -Visual soil screening using photoionization detector PID
- **Petroleum Pipeline Pump Station: Southeast Michigan** – Field geologist responsible for completing the assessment of a release of diesel fuel from an aboveground storage tank on a property during construction. Activities included completing over 16 soil borings collection of soil and surface water samples and assisting with the completion of a No Further Action report.

GROUNDWATER MONITORING

Ms. Lambert has performed groundwater monitoring and sampling since beginning her career. She has:

- Performed quarterly groundwater monitoring and sampling using conventional and low-flow methodologies at over 300 LUST sites;
- Performed monthly, quarterly and annual groundwater monitoring and sampling at several large-scale industrial sites;
- Perform monthly, quarterly and annual groundwater monitoring and sampling for multiple landfill sites in compliance with all quality assurance/control measures;
- Performed field testing and titration for various chemical parameters including iron, sulfide, and carbon dioxide at several large-scale industrial sites.

INDUSTRIAL WASTEWATER COMPLIANCE MONITORING

Active Solid Waste Landfill: Northville, Michigan – Duties include compliance reporting in accordance with a Ypsilanti Community Utilities Authority wastewater discharge permit. This involves monthly and quarterly self-monitoring reports for wastewater parameters including PFAS for both ASTM and EPA methods.

Active Solid Waste Landfill: Stanley, New York – Duties include monitoring of leachate discharged from pumphouses and lagoons in accordance with New York state environmental guidelines and permit requirements. This project also includes odor mitigation and reporting of findings.

Solid Waste Landfill: Waterford, Michigan – Duties include monitoring and maintenance of a leachate pre-treatment system. Mrs. Lambert conducted leachate discharge monitoring in accordance with a Great Lakes Water Authority (GLWA) wastewater discharge permit. This involves semi-annual self-monitoring reports and semi-annual sampling. This project also includes operation and maintenance of a landfill gas recovery system, reviewing data collected by the service contractor, collecting and summarizing gas monitoring results and preparing on a quarterly basis, figures that summarize vacuum influence at monitoring locations. Ms. Lambert also coordinates the treatment system maintenance groundwater sampling, well drilling and well maintenance programs at this site.

Former Dutton Corporate Centre: Auburn Hills, MI – Ms. Lambert conducted monitoring and maintenance of a leachate pretreatment system. Activities also include leachate discharge monitoring in accordance with a Detroit Water and Sewer Department (DWSD) wastewater discharge permit. This involves semi-annual self-monitoring reports and semi-annual sampling of influent and effluent

wastewater. This project also includes maintenance of landfill gas wells, collecting data from wells, summarizing gas monitoring results and preparing on a quarterly basis tables and reports that summarize methane concentrations and pressures at monitoring locations.

Michigan.com: Sterling Heights, Michigan – Activities include semi-annual discharge monitoring and field sampling in accordance with GLWA wastewater discharge permit.

PFAS EVALUATION

Closed Solid Waste Landfill – Waterford, Michigan – Ms. Lambert manages and conducts monthly PFAS compliance monitoring at this facility according to GLWA wastewater discharge permit requirements. Samples are collected at the compliance point and internal samples at resin and granular activated carbon (GAC) vessels.

Laundering Facility – Livonia, Michigan – Ms. Lambert manages and conducts quarterly PFAS compliance monitoring at this facility according to GLWA wastewater discharge permit requirements.

Municipal Wastewater Sludge Treatment for PFAS – Wixom, Michigan – Managed field and data evaluation services in removing PFAS from impacted sludge and stormwater. Monitored the pretreatment system that included a filter press, DAF, sand filters, granular activated, and ion exchange resins.

Solid Waste Landfill – Claypool, Indiana – Ms. Lambert conducted PFAS sampling from lift stations, aerated leachate ponds and constructed wetland areas to evaluate the fate and transport of PFAS.

Solid Waste Landfill – Northville, Michigan – Ms. Lambert assisted in PFAS evaluations and monitored PFAS removal from landfill leachate.

Remediation of Dewatered Groundwater for PFAS, Colorado Springs, Colorado – Coordination and implementation of a treatment system to remove PFAS from dewatered groundwater via adsorption and particle filtration. Coordinated the onsite activities and off-site disposal for excess groundwater. Collected water samples to verify the PFAS removal.

AIR PERMITTING/REPORTING

County Airport (Lansing, MI) – Duties include preparation and submittal of a renewal operating permit (ROP) per Rule 974 (R 336.1974) Subpart DDDD for emissions standards for existing commercial and industrial solid waste incinerators (CISWI) to the Air Quality Division (AQD) at Environment, Great Lakes and Energy (EGLE). Oversight of port installations, stack test sampling and emissions test reporting were included under the requirements of the ROP.

County Airport (Lansing, MI) – Air emissions reporting and submittal under the Michigan Air Emissions Reporting System (MAERS) AQD.

Gannett Publishing Services (Sterling Heights, MI) – Annual MAERS reporting and submittal to AQD.

Rosati Specialties (Clinton Township, MI) – Annual MAERS reporting and submittal to AQD.

AIR MONITORING

ESS Coke Industrial Energy Services (Detroit, MI) – Ms. Lambert's duties included certification and application of USEPA Method 9: Visual Plume opacity emission standards and USEPA Method 303: determination of visible emission (VE) from the following by-product coke oven battery sources: charging systems during charging; doors, topside port lids, and offtake systems on operating coke ovens; and collecting mains.

Bellevue Development Site (Detroit, MI) – Ms. Lambert's duties included health and safety coordinator-air monitor technician. She performed daily air monitoring using a 5 Gas Meter in and around large excavations and exclusion zone air sampling in compliance with all quality assurance/control requirements. Ms. Lambert also downloaded logged data from the meters and interpreted it daily. She directed weekly onsite safety meetings and served as the confined space air monitor technician.

REMEDIATION/BROWNFIELDS

Former Sanicem Landfill Brownfield Redevelopment, Dutton Corporate Centre, LLC, Auburn Hills, Michigan —Ms. Lambert conducts landfill gas monitoring/reporting, leachate collection and treatment operation and maintenance, compliance sampling for the POTW discharge permit requirements, and soil erosion control measures.

SOLID WASTE LANDFILLS:

Fons/Old Wayne Landfills, University of Michigan OSEH, Rawsonville, Michigan – Ms. Lambert Conducted monthly static water level monitoring at piezometers and borewells. Data entry into the client's proprietary database. Groundwater monitoring and sampling was performed at the landfill.

Willow Run Creek Landfill: Belleville, Michigan – Duties included groundwater monitoring and sampling. Surface water monitoring and sampling was performed in three locations in the Willow Run Creek.

Solid Waste Landfill, Northville, Michigan – Performed PFAS sampling according to NPDES permitting.

Solid Waste Landfill, Stanley, New York – Performed sampling and odor monitoring of lagoons and lift stations to evaluate the leachate quality of the total and individual sources.

Solid Waste Landfill, Claypool, Indiana – Performed sampling of leachate ponds and lift stations to evaluate the leachate quality of the total and individual sources.

Additionally, Ms. Lambert has:

- Conducted operation and maintenance activities of three SVE systems;
- Conducted manual free product removal at over 50 LUST sites;

- Conducted oversight of installation of soil borings and monitoring wells at a multitude of contaminated sites;
- Delineation of phase separated and dissolved phase hydrocarbon plumes using techniques including LIF;
- Preparation and Execution of Phase I & II ESAs and BEAs, and;
- Prepared and submitted MDEQ Part 213 required reports for over 40 LUST projects.

EMERGENCY SPILL RESPONSE ACTIVITIES:

Spill Response (Wixom, MI) – Ms. Lambert communicated with the client, EGLE, MDOT and local agencies to complete all remedial efforts. Coordination with the response company for the initial site assessment and remedial activities, field screening, manifesting, verification sampling and reporting.

Spill Response (Sanilac, MI) – Ms. Lambert assisted in remedial efforts at the site. These duties included: initial site assessments, field screening, verification sampling.

Spill Response (Troy, MI) - Ms. Lambert assisted in communication with the client, EGLE, MDOT and local agencies during this televised tanker fire. Coordination with the response company and subcontractors during site assessment and remedial activities and restoration, inspection and replacement of absorbent booms in the upstream and downstream of dams and inlets and outlets of affected culverts of the Spencer Drain. Ms. Lambert managed a crew that conducted field screening, manifesting, verification sampling, PFAS surface water sampling, collecting GPS coordinates for mapping and reporting.

Spill Response (Romulus, MI) – Ms. Lambert managed the environmental remediation activities of a large petroleum spill that affected three separate areas that included a release into a ditch that is connected to the Carter Drain. Management, coordination and daily status communications with the emergency response company, EGLE, MDOT, Wayne County and the transport company to meet EGLE compliance requirements with remedial efforts. Activities conducted were boom installation and maintenance, field screening, verification soil sampling, coordination with fiber optics company to locate the utility for safe digging, tree removal, liquid and solid disposal, manifesting and reporting.

EMPLOYMENT

Environmental Resources Group, LLC (Senior Geologist)

2011 – Present

Fishbeck, Thompson, Carr & Huber, Inc. (Staff Geologist)

2006 - 2010

Nesa & Associates, Inc. (Staff Geologist)

2002 - 2006

PROFESSIONAL AFFILIATIONS

American Institute of Professional Geologists

Michigan Association of Environmental Professionals (Board Member 2019-2023)

(President 2021-2022) (Vice President 2020-2021)

Michigan Petroleum Association



CHRISTINA C. SCHROEDER
PROJECT MANAGER

EDUCATION

B.S., Earth Science: Geology Focus, University of Michigan, 2013

PROFESSIONAL EDUCATION COURSES

ASTM's Risk-Based Corrective Action (RBCA) Applied at Petroleum Release Sites, 2020
OSHA 40-Hour Hazardous Waste Operations and Emergency Response safety training, 2012
OSHA 8-Hour Hazardous Waste Operations and Emergency Response refresher course, 2023
OSHA Confined Space Training
Certified
CN On-track Safety
First Aid/CPR/AED
Aerial Work-Platforms Operator Training

PROFESSIONAL EXPERIENCE: 10 YEARS

Site Delineation and Feasibility Study for Part 213 Site for EGLE, Clinton Township

Project manager responsible for review of previous investigations, permitting, collection of soil and groundwater sampling to delineate NAPL and soil and groundwater contamination, analysis of laboratory data, and preparation of reports including cost addendum to EGLE for continued delineation events. Prepared and solicited bid-specifications for excavation. Provided oversight during excavation activities and in-situ remediation.

Environmental Site Assessments – City of Detroit Housing and Revitalization Department, Detroit, Michigan

Performed site reconnaissance, assessment of background and historical data, soil sampling, groundwater monitoring and sampling, field oversight, analysis of laboratory data and preparation of Phase I and Phase II ESA, BEA, and Documentation of Due Care Compliance.

Underground Storage Tank Removal Oversight – Multiple Sites, Michigan

Performed UST removal coordination and oversight, including permitting, initial investigations, monitoring and classification of soils, collection of verification samples, and analysis of data. Prepared initial and final assessment reports, and closure reports for EGLE. File land use restrictions with county and local governments.

Environmental Site Assessments- Multiple Sites, Detroit Metropolitan Airport, Romulus, Michigan

Performed site reconnaissance, assessment of background and historical data, soil sampling, groundwater monitoring and sampling, field oversight, analysis of laboratory data and preparation of Phase I and Phase II ESA for multiple sites near Detroit Metropolitan airport.

Sediment Analysis- Belle Isle, Detroit, Michigan

Performed drilling oversight, soil and sediment classification and sampling, and the analysis of laboratory data to provide recommendations for the plan and design of the rehabilitation of fisheries on island.

Preliminary Site Investigation - MDOT M-1 Rail Project, Detroit, Michigan

Coordination and collection of soil samples along Woodward Avenue prior to M-1 Rail construction and analysis of laboratory data to provide MDOT recommendations for soil disposal. Prepared final report.

Corridor Study- Capital Area Transit Authority, Lansing, Michigan

28003 Center Oaks Court • Suite 106 • Wixom • Michigan 49393

Phone: 248•773•7986

Assessment of seven-mile corridor through Lansing, East Lansing, and Meridian Township. Included field reconnaissance of proposed bus lanes along Grand River and Michigan Avenue, review of historical data from federal, state, and local electronic databases, reviewed information and data for properties along corridors at state and local departments. Prepared final report including recommendations for placement of new bus stops and bus lanes, and soil disposal recommendations during construction.

Solid Waste Landfill - Waterford, Michigan

Monitoring and maintenance of a leachate pretreatment system, including PFAs sample collection. Activities also include leachate discharge monitoring in accordance with the Great Lakes Water Authority (GLWA) wastewater discharge permit. Monitoring included collecting system effluent samples for PFAS analysis.

Spill Prevention, Control, and Countermeasure – Various Locations, Michigan, Tennessee, California

Evaluated bulk oil storage containment, capacities, and storage practices to prepare a site-specific Spill Prevention, Control, and Countermeasure Plans, according to the Environmental Protection Agency (EPA) standards, for multiple automobile dealerships.

Geotechnical Drilling Supervision - MDOT I-75 Mega Project, Oakland County, Michigan

Performed in-situ geotechnical testing including California Bearing Ratio (CBR) testing, vane shear testing, and standard penetration testing. Collected soil samples for classification and geotechnical testing, identification of ground water seepage, and field verification of design parameters for construction.

Geotechnical Drilling Coordination and Supervision – Selfridge Air National Guard Base, Runway Reconstruction and Main Gate Construction, Harrison Township, Michigan

Performed geotechnical investigations for the rehabilitation of the existing runway, and construction of the proposed main gate and entry road. Collected soil samples for classification and geotechnical testing. Provided coordination of geotechnical testing and required analysis. Assisted with the preparation of final reports including design recommendations based on geotechnical results.

Geotechnical Drilling Coordination and Supervision – DeVor Dairy, Decker, Michigan

Performed geotechnical investigations for the rehabilitation and design of multiple wastewater and manure storage facilities and silage storage pads. Collected soil samples for classification and geotechnical testing. Performed survey of property for wastewater design. Assisted with compliance services and report preparation.

PROFESSIONAL AFFILIATIONS

American Institute of Professional Geologists (AIPG)

Association for Women in Science

Huron Valley Chamber of Commerce

Kensington Valley Chamber of Commerce

Citizens Advisory Work Group for the Michigan PFAS Action Response (MPART)

ATTACHMENT 2

FIELD ACTIVITY LOGS AND PROGRESS REPORTS (1 of 2)



EXAMPLES FOR PROJECT 14





Environmental Resources Group

28003 Center Oaks Court • Suite 106 • Wixom, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

April 29, 2022

Ms. Kimberly Ethridge

The Michigan Department of Environment, Great Lakes, and Energy
27700 Donald Court
Warren, Michigan

RE: Status Update – Berkley Coolidge and Wiltshire Y22189

Dear Ms. Ethridge:

Excavation activities were completed this week. A total of 26-loads of petroleum impacted soil was removed from the site.

Restoration activities are on-going, as follows:

- Backfilling and compaction will be completed today
- The first layer of asphalt will be completed this Sunday, and the final layer will happen next week (I'll let you and Freddie know the date when we get word)
- JSS is trying to weld the damaged railing
- The damaged parking blocks will be replaced during stripping

In addition, I will contact the city for a final inspection date.

Have a great weekend!

Christina Schroeder
Project Manager



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/18/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Overcast, 40°F	Weather PM: Snow/Rain, 36°F
ERG Employees: JEC, CCS	
ERG Equipment: PID	Total Mileage: 40
Contractors on-site working for ERG:	
JSS	Contractors Employees:
	Dan, Christ
Contractors Equipment: Excavator, skid-steer	
Visitors:	
Objective/Scope of Work: Oversee UST removal	
Site Activity:	
TIME:	
8:15	Arrived on site. JSS crew on site. Went over work plan and HASP. Took initial site photos. Sketch utilities.
8:40	Fencing arrived & began putting up fence around work zone
8:45	Kim E. (EGLE) arrived on site.
9:15	Fencing completely erect. Skid-steer arrived on site.
9:40	Excavator arrived on site.
10:00	JSS began breaking up asphalt/concrete to expose UST
11:00	Exposed three USTs. Two USTs filled with sand, one UST ~ 2/3 full of liquid. Used bailer to examine contents. Appears to be mostly water with a sheen on top. Smells of diesel fuel. The UST housing liquid is orientated NE to SW. This UST now referred to as "UST#1". The two USTs filled with sand are located to the east of UST#1 and are orientated NW to SE. The southernmost of these two USTs referred to as UST#2 and the northern, UST#3
11:30	CCS left site.

Signature: 

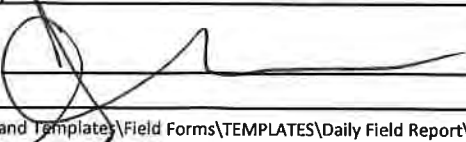
Date: 4/18/22 Page: 1 of 2

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/18/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Overcast, 40°F	Weather PM: Snow/Rain, 36°F
ERG Employees: JEC, CCS	
ERG Equipment: PID	
Total Mileage: 48	
Contractors on-site working for ERG:	Contractors Employees:
JSS	Don, Christ
Contractors Equipment: Excavator, skid-steer	
Visitors:	
Objective/Scope of Work: Oversee UST removal	
Site Activity:	
TIME:	
12:15	EWRS (vac truck) arrived on site to remove liquid from UST #1
12:30	Liquid removed from UST #1 (~250 gallons)
12:45	All USTs removed from ground. All USTs constructed with steel. UST #1: ~9' length x ~4' diameter. UST #2 & UST #3: ~6' length x ~4' diameter.
13:10	JSS continues removing/breaking up asphalt/concrete.
14:15	Began uncovering vault area
15:30	All concrete/asphalt stockpiled.
16:10	Fairfax no trucks coming today. Load up equipment.
16:15	Left site
JL 4/18/22	

Signature: 

Date: 4/18/22 Page: 2 of 2

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/19/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Partly Sunny, 35°F	Weather PM: Partly Cloudy, 40°F
ERG Employees: JEC	
ERG Equipment: RID	Total Mileage: 48
Contractors on-site working for ERG:	
JSS	Contractors Employees:
	Don, Christ
Contractors Equipment: Excavator, skid-steer	
Visitors:	
Objective/Scope of Work: Oversee UST / soil removal	
Site Activity:	
TIME:	
7:00	Arrived on site. Trucks on site for asphalt/concrete haul away.
8:15	Kim (EGLE) arrived on site.
8:35	Concrete/asphalt hauled off site. Begin excavation/haul away of c-soil. Screen soil / collect VSR samples
9:30	Collected soil sample B-1 (8-9'), Floor
10:00	Collected soil sample S-1 (7-8'), sidewall
15:30	No more trucks today. Began excavating "vault/pit" area. Removed hoist components, debris, & drums.
16:10	Finished clearing out materials from pit
16:20	Left site
4/19/22 JEC	

Signature:

Date: 4/19/22

Page:

1 of 1

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/20/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Sunny, 38°F	Weather PM: Sunny, 48°F
ERG Employees: JEC	
ERG Equipment: P/D	Total Mileage: 51
Contractors on-site working for ERG:	
JSS	Contractors Employees:
	Don, Christ
Contractors Equipment: Excavator, Skid-steer	
Visitors:	
Objective/Scope of Work: Oversee c-soil removal	
Site Activity:	
TIME:	
6:55	Arrived on site. JSS on site warming up equipment.
	Began hauling c-soil / continuing excavations from east to west.
8:45	Kim (EGLE) on site. Collected soil sample S-2 (7-8') sidewall
9:00	Collected soil sample B-2 (8-9') floor
10:45	Collected soil sample B-3 (8-9') floor
14:00	Collected soil sample S-3 (7-8') sidewall
14:05	Collected soil sample S-4 (7-8') sidewall
14:10	Collected soil sample B-4 (8-9') floor
14:30	Collected soil sample S-5 (7-8') sidewall
14:35	Collected soil sample S-6 (7-8') sidewall
14:40	Collected soil sample B-5 (8-9') floor
14:45	Levi's Truck #762 arrived, but had flat tire, no soils loaded
16:10	Left site
JL 4/20/22	

Signature: 

Date: 4/20/22

Page: 1 of 1

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/21/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Rain, 50°F	Weather PM: Partly Sunny, 62°F
ERG Employees: JEC	
ERG Equipment: PID	
Total Mileage: 52	
Contractors on-site working for ERG:	
JSS	Contractors Employees:
	Don Christ
Contractors Equipment: Excavator, Skid-steer	
Visitors:	
Objective/Scope of Work: Oversee c-soil removal	
Site Activity:	
TIME:	
6:55	Arrived on site. JSS arriving on site. Trucks on site for soil haul away.
7:05	Began loading trucks with c-soil for haul away/continue excavation.
9:40	Excavation completed. Total of 23 load trucks of soil hauled off site and 4 trains.
10:30	Collected soil sample S-7 (6-7'), sidewall
10:35	Collected soil sample S-8 (6-7'), sidewall
10:40	Collected soil sample B-6 (8-9'), floor.
	Final excavation dimensions S ~ 60' L x 54' W x 8' D
11:00	Finalize field sketch
12:45	Fill sand began arriving on site
15:00	No more backfill being delivered left site.
4/21/22	

Signature:

Date: 4/21/22

Page: 1 of 1

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/25/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Overcast/Rain, 58°F	Weather PM: Overcast/Rain, 55°F
ERG Employees: JEC	
ERG Equipment:	
Total Mileage: 54	
Contractors on-site working for ERG:	Contractors Employees:
JSS	Dan, Christ
Contractors Equipment: Excavator, Skidsteer, vibratory roller	
Visitors:	
Objective/Scope of Work: Oversee site restoration	
Site Activity:	
TIME:	
7:55	Arrived on site. Trucks lined up with backfill sand.
8:30	JSS began compaction operations between backfill load deliveries with vibratory roller.
9:00	SME arrived on site to perform compaction testing per 2' lift
9:15	Kim (EHE) arrived on site.
15:50	Kim (EHE) left site.
16:30	Last load of sand delivered to site, rolled, & compaction testing completed.
	Left site
JEC 4/25/22	

Signature: 

Date: 4/25/22

Page: 1 of 1

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/26/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Sunny, 43°F	Weather PM: Overcast, 46°F
ERG Employees: JEL	
ERG Equipment: Excavator, Skid-steer	Total Mileage: 55
Contractors on-site working for ERG:	
JSS	Contractors Employees:
	Don, Christ
Contractors Equipment: Excavator, skid-steer, vibratory roller	
Visitors:	
Objective/Scope of Work: Oversee site restoration	
Site Activity:	
TIME:	
7:00	Arrived on site. JSS on site preparing to receiving gravel.
8:30	SME arrived on site.
9:00	JSS got word gravel trucks may not be coming until later or not at all today. SME left site.
9:55	Trucks arriving delivering gravel.
15:00	No more gravel being delivered today. 2 loads delivered today. Left site.
JEL 4/26/22	

Signature:

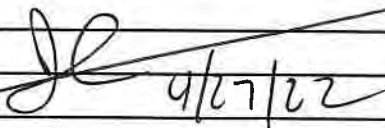
Date: 4/26/22

Page: 1 of 1

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/27/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Overcast, 35°F	Weather PM: Partly sunny, 40°F
ERG Employees: JEC	
ERG Equipment:	
Total Mileage: 55	
Contractors on-site working for ERG:	Contractors Employees:
JSS	Don, Christ
Contractors Equipment: Excavator, skid-steer	
Visitors:	
Objective/Scope of Work: Oversee site restoration	
Site Activity:	
TIME:	
8:00	Arrived on site. JSS on site. Went over work plan for the day. Final loads of gravel coming today, and final load of asphalt/soil to be hauled away.
9:15	Load of gravel delivered to site
10:20	Rob (concrete repair) arrived on site to form walkway area concrete replacement
11:00	Load of gravel delivered to site. This truck hauled last of asphalt/soil off site.
14:10	Kim (E&L) arrived on site.
14:35	Load of gravel delivered to site. Cement truck arrived on site.
16:10	Rob finishes cement.
16:30	Left site
 4/27/22	

Signature: 

Date: 4/27/22

Page: 1

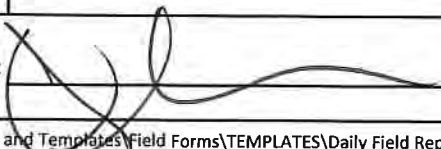
of 1

Reviewed by:



DAILY FIELD REPORT

J's Bar / Coolidge and Wiltshire	
Project Name: Former Auto	Date of On-Site Activity: 4/28/22
Project Number: 9372	Site Location: 2859 Coolidge Hwy, Berkley
Weather AM: Mostly Sunny, 40°F	Weather PM:
ERG Employees: JEC	
ERG Equipment: Total Mileage: 55	
Contractors on-site working for ERG:	Contractors Employees:
JSS	Christ, Don
Contractors Equipment: Mini Excavator, Skid-steer, vibrating roller	
Visitors:	
Objective/Scope of Work:	
Site Activity:	
TIME:	
7:40	Arrived on site. JSS on site compacting gravel with roller
7:55	Mini excavator arrived on site for trenching electrical line
10:20	Electrician arrived on site to install electrical line from sign to building. JSS began digging trench.
10:55	Load of gravel delivered to site.
12:20	Conduit installed and trench backfilled. JSS spreads last load of gravel. Continue grading/compaction
3:30	Left site
JL 4/28/22	

Signature: 

Date: 4/28/22

Page: 1 of 1

Reviewed by:

EXCAVATION SOIL SAMPLE TABLE

PAGE 1 OF 3

Site Name: Coolidge & Wilshire Drive ^{Aut}

Project Number: 9372



Environmental Resources Group
28003 Center Oaks Court • Suite 106 • Wilson, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

Date	Field Screening Sample ID	Sample Location / Description	Depth (ft. below grade)	Initial PID Reading / Final PID reading ¹ (ppm)	Oil N-Soil Test Kits (+/-)	Laboratory Confirmation Sample (Yes/No)
4/18/22 10:30		overburden soil from UST	~2	0.2		
4/18/22 11:15		" "	~2	0.1		
4/19/22 12:50		Below USTs	~7	726.8		
4/19/22 8:55		UST area, hauled off site	unk.	496.2		
9:12		" "	"	0.8		
9:18		" "	"	184.3		
9:25		East end of excavation	~4	0.0		
9:30		Flour " "	~8	0.0		B-1 (8-9')
9:40		" "	~3	0.4		
9:50		NE corner of excavation	~2	0.0		
10:06		sidewalk " "	7-8	0.0		S-1 (7-8')
10:35		Stockpiled soils, hauled off site	unk.	4.7		
10:39		" "		0.8		
10:50		SE corner of excavation	4	1.1		
10:55		S end of excavation	3	0.0		
12:40		Stockpiled soils, hauled off site	unk.	2.4		
12:43		SE corner of excavation	"	0.2		
12:50		SE corner of excavation	5	0.0		
12:55		" "	"	0.0		
14:48		Stockpiled soils, hauled off site	unk.	10.1		
14:52		" "	"	0.2		
15:20		S end of excavation	3	0.3		
15:45		Soil from "pit"	5	41.4		

Note:

1. Additional excavation conducted laterally until all PID readings were at / or below 50 ppm.

EXCAVATION SOIL SAMPLE TABLE

Site Name: Berkeley Coolidge; Wiltshire Former Auto

Project Number: 9372



Environmental Resources Group
28003 Center Oaks Court • Suite 106 • Warren, MI • 48393
Phone: 248-773-7985 • Fax: 248-924-3108

PAGE 2 of 3

Date	Field Screening Sample ID	Sample Location / Description	Depth (ft. below grade)	Initial PID Reading / Final PID reading ¹ (ppm)	Oil N-Soil Test Kits (+/-)	Laboratory Confirmation Sample (Yes/No)
4/20/22 8:20		Stockpiled soil hauled off site	UNK.	9.7		
4/20/22 8:35		" "	"	0.4		
8:38		" "	"	2.6		
8:45		Sidewall, near SE corner of excavation	7-8'	0.0		S-2 (7-8')
8:50		Floor, near SE corner of excavation	8-9'	0.0		B-2 (8-9')
9:15		Stockpiled soil hauled off site	UNK.	11.6		
9:55		" "	"	2.8		
10:00		" "	"	7.9		
10:05		" "	"	6.1		
10:10		" "	"	8.4		
10:15		UST area	~6'	115.7		
10:45		Floor, South central	8-9'	0.0		B-3 (8-9')
11:15		Stockpiled soil hauled off site	UNK.	15.6		
11:25		" "	"	8.4		
11:58		" "	"	1.6		
12:40		" "		46.7		
12:43		" "		264.2		
12:50		" "		81.6		
13:35		" "		181.1		
14:00		South sidewall, eastern	7-8	0.0		S-3 (7-8')
14:05		South sidewall, western	7-8	0.3		S-4 (7-8') ¹ DUP-1
14:10		Pit area, floor	8-9	0.0		B-4 (8-9')
14:20		Stockpiled soil hauled off site	UNK.	44.9		

Note:

1. Additional excavation conducted laterally until all PID readings were at / or below 50 ppm.

EXCAVATION SOIL SAMPLE TABLE *Former Auto* *PAGE 3 of 3*

Site Name: Berkley Coolidge ; Wiltshire

Project Number: 9372



Environmental Resources Group

28003 Center Oaks Court • Suite 106 • Wixom, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

[illegible]

Note:

1. Additional excavation conducted laterally until all PID readings were at / or below 50 ppm.

MANIFEST TRACKING SHEET

Site Name: Coolidge Wiltshire Farmer Auto

Project Number: 9372

ERG

Date	Load Number	Trucking company	Truck #	Constituents (Soil, water, sludge)	Time Onsite	Load Time (mins)	Manifest Number	Return Time	Weight (tons)
4/18/22		EWRS		Liquid	12:15	15			250 gal
4/19/22	1	Dan's	164	Soil	8:45	15	17603		24 yds
	2	Lou's	764	Soil	9:10	10	17604		24 yds
	3	TKMS	648		9:45	10	17605		
	4	Dan's	165		10:30	10	17606		
	5	Dan's	164		11:00	10	17607		
	6	Dan's	165		12:35	10	17608		
	7	Dan's	164		13:10	10	17609		
	8	Dan's	165		14:45	10	17610		
4/20/22	9	Dan's	156		6:55	15	17611		
	10	Lou's	243		8:15	10	17612		
	11	Lou's	762		8:30	15	17613		
	12	Dan's	156		9:10	10	17614		
	13	Trm Aggregate	87		9:50	15	17615		40 yds
	14	"	78		10:05	15	17616		
	15	Lou's	501		10:30	10	17617		24 yds
	16	Lou's	762		11:10	10	17618		
	17	Dan's	156		11:20	10	17619		
	18	ESP	307		11:35	10	17620		
	19	Lou's	243		12:20	15	17621		
	20	Trm Aggregate	87		12:35	10	17622		40 yds
	21	" "	78		12:45	15	17623		
	22	Dan's	156		13:30	10	17624		24 yds
	23	Lou's	501		14:15	10	17625		24 yds
4/21/22	24	Lou's Dan's	156 762		14:45	10	17626		
	25	Lou's	502		7:10	10	17627		

MANIFEST TRACKING SHEET

Site Name: Berkley Coolidge Wiltshire Former Auto
Project Number: 9372

[illegible]

Backfill Tracking Table

Site Name: Berkley Coolidge Withshire Farm AutoProject Number: 9372

Date	Load Number	Trucking company	Truck #	Ticket #	Type (Class II, Gravel, etc)	Weight (tons)
4/21/22	1	Dani's	156	661768 536934	Class II	27.84
4/25/22	2	Lou's	501	1004987		27.41
	3	↓	492	1115707		28.36
	4	↓	307	1100756		29.47
	5	↓	498	1004609		28.26
	6	Dani's	147	696317		23.32
	7	↓	141	648257		21.32
	8	Lou's	500	1004733		29.05
	9	Dani's	147	696318		24.68
	10	Lou's	498	1004611		28.47
	11	Lou's	764	115789		27.94
	12	Dani's	141	648253		23.04
	13	Lou's	307	1100758		29.46
	14	↓	501	1004989		28.62
	15	↓	413	1115340		27.45
	16	Dani's	147	696319		23.89
	17	Lou's	307	1100760		30.69
	18	↓	498	1004612		28.23
	19	Dani's	141	648254		23.80
	20	↓	147	696320		24.71
	21	Lou's	307	1100762		29.34
	22	↓	498	1004613		30.69
	23	Dani's	141	648255		23.62
	24	Lou's	501	1004990		29.21
	25	Dani's	147	696321		23.40
	26	Dani's	141	648257		23.73

Backfill Tracking Table

Site Name: Berkley Coolidge Wiltshire Former Auto

Project Number: 9372

[illegible]

~~705~~ 705



UTILITIES
JC 4/18/22

- Unknown Utility / Anomaly
- Gas Line
- GPR/EM Survey Area
- Water
- Sewer

**Public Marked Utilities Not Verified by Bloodhound



Adapted from Google Earth Aerials, not a legal survey.

FIGURE 2

SITE PLAN WITH
BLOODHOUND UTILITIES

BERKLEY COOLIDGE &
WILTSHIRE FMR AUTO
2859 COOLIDGE HWY
SECTION 18 T.1N., R.11E.,
CITY OF BERKLEY,
OAKLAND COUNTY, MICHIGAN

scale	as shown	date drawn	9/13/2021
project mgr.	LG	drawn by	DAL
dwg #	GR4954-E1-T6	revised	dal 9/27/2021

Superior
ENVIRONMENTAL CORP

EXAMPLES FOR PROJECT 2





August 16, 2019

Mr. Greg Barrows
Project Manager
EGLE RD Southeast Michigan District
27700 Donald Ct.
Warren, Michigan 48092

**Re: EGLE File #761/12169.SAR
Closed Waterford Hills Landfill Site
Waterford, Michigan
Progress Report: January - June 2019
ERG Project 1005./1968.**

Dear Mr. Barrows,

Enclosed is the following item regarding the referenced site:

Q-1/Q-2 2019 Progress Report

On-site meetings took place January 17, February 20, March 14, May 9, and June 28, 2019. Technical Service Professionals, LLC (TSP) payment applications #146 through #156 (PFAS Charges were invoices separately up to the February billing period) were reviewed for work completed during the current and prior periods. Active and future objectives are summarized in the enclosed update. If you have any questions, please contact me 248-773-7986.

Sincerely,

ENVIRONMENTAL RESOURCES GROUP, LLC

A handwritten signature in blue ink that reads 'Robert T. Reichenbach'.

Robert T. Reichenbach, C.P.G.
President

Enclosures: Progress Report – Quarters 1/2 2019

EGLE LOE File #761/12169.SAR
Waterford Hills Landfill Site (ID. # 63000165)
Waterford, Michigan
ERG Project No. #1005./#1968.001
PROGRESS REPORT – Quarters 1/2 2019

A. Work accomplished during the previous period:

OBJECTIVE #1 – ROUTINE O&M ACTIVITIES

Operation and maintenance (O&M) activities have been on-going at the Site. Services included bag filter replacement, flare system and leachate system operation and monitoring. Accumulated sediment in the wet well was removed of and disposed of properly in June. An “O-ring” was replaced in pump #1 in the wet well. The building floor was pressure washed in April. A new electronic flowmeter/totalizer was installed on May 17, 2019 replacing the old meter that was fouled resulting in reduced flow.

OBJECTIVE #2 – MONTHLY LEACHATE SYSTEM O&M

The leachate system was upgraded in December 2018 to effectively remove PFAS compounds from the waste stream. Additional modifications were made to address removing Teflon tape/paste that was used on pipe threads and sampling ports. Performance monitoring for the system will begin in January 2019.

Additionally, a 200-gallon canister was installed for backflushing purposes. Treated leachate is collected in the canister and used to backflush the GAC units individually. The treated leachate is conveyed using a transfer pump that was installed at the same time.

ERG submitted a Best Management Program Plan (BMP) to reduce and eliminate PFAS in the discharge stream on March 6, 2019. Weekly monitoring of the effluent (Sampling Manhole) for PFAS compounds has continued throughout the reporting period.

Based on review of the field reports prepared by TSP and data recorded by ERG during various system checks, 986,778-gallons of leachate were treated and discharged to the sanitary sewer for the Q1/Q2 2019 reporting period. The system averaged approximately 5,407-gallons per day for the 6-month period. The six-month compliance report was completed and submitted to the Great Lakes Water Authority (GLWA) during the reporting period. All chemical parameters were reported to meet permitted levels.

OBJECTIVE #3 – MONTHLY LANDFILL GAS SYSTEM O&M

Mr. Greg Barrows –EGLE-RD

July 24, 2019

Page 3

In early December 2018 TSP observed the gas flare was damaged as a result of gun shots. The bullets damaged the flare and thermo-couplers. The thermo-couples were replaced in January 2019.

Landfill gas system monitoring is conducted by TSP once every six months. Gas monitoring was completed on June 28 – July 1, 2019.

OBJECTIVE #4 – MOWING LANDFILL

Landfill mowing was completed in June 2019.

OBJECTIVE #8 – CARBON DISPOSAL/REPLACEMENT

The most recent GAC change-outs occurred on April 22, 2019 for GAC unit #1, and April 26, 2019 for GAC unit #2. Regular GAC unit backwashing (once per week) has been completed by TSP.

OBJECTIVE #9 – FILTER BAG REPLACEMENT

Filter bags were replaced twice weekly during the period during the routine site visits. Due to increased pressures during operation that were reducing the flow rate, adjustments were made to the micron filter sizes of the bag filter #3 (following the IX unit) from 250 to 500.

OBJECTIVE #10 – FILTER BAG DISPOSAL

Filter bags are disposed with the spent GAC as carbon waste.

ERG reviewed and recommended for payment, TSP Payment Applications #146 through #156 during the period. Progress meetings took place January 17, February 20, March 14, May 9, and June 28, 2019.

Anticipated work items for the upcoming six-months:

OBJECTIVE #1 – ROUTINE O&M ACTIVITIES

Operation and maintenance (O&M) activities will continue. TSP monthly work schedules will be provided prior to each calendar month.

OBJECTIVE #2 – MONTHLY LEACHATE SYSTEM O&M

ERG is completing performance monitoring of the upgraded system to confirm the removal of PFAS compounds.

A regular semi-annual POTW Permit Compliance sampling event occurred for next 6-month reporting period in July 2019.

OBJECTIVE #3 – MONTHLY LANDFILL GAS SYSTEM O&M

O&M activities are scheduled for regular intervals. Regular maintenance of the blowers will continue. Gas monitoring will be scheduled for November of 2019.

ERG has procured a GEM 5000 meter on behalf of EGLE. The unit will be used at WHLF and other EGLE projects as necessary.

OBJECTIVE #4 – MOWING LANDFILL

The next planned mowing event should take place in late summer 2019.

OBJECTIVE #7 – GROUNDWATER MONITORING

The next planned groundwater sampling event is planned for September 2023.

OBJECTIVE #8 – CARBON DISPOSAL/REPLACEMENT

A carbon change-out was completed in April 2019. The next event is likely for September or October 2019. This will take place only as necessary.

OBJECTIVE #9 – FILTER BAG REPLACEMENT

Filter bags are replaced as needed.

OBJECTIVE #10 – FILTER BAG DISPOSAL

Filter bags are disposed of with the carbon waste.

The Special Discharge Report to Great Lakes Water Authority (GLWA) was prepared and submitted prior to June 30, 2019. Regular on-site progress meetings with ERG, EGLE and TSP personnel are planned.

B. Real or anticipated problems on the project:

No problems are anticipated.

C. Update of previously approved detailed project schedule, including explanations for any delays or changes:

No variations or delays have occurred.

D. Items needed from EGLE:

Mr. Greg Barrows –EGLE-RD

July 24, 2019

Page 5

None.

E. Verbal Contact Records for the period:

Nothing outside of normal contacts were made during the reporting period. ERG and EGLE met with GLWA representative in July 2019 for the facility inspection.

FLARE READINGS

25359.8

Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit

Date: 12-2-22

Arrival Time: _____

Departure Time: _____

Weather: cloudy & cold 37

Personnel and Affiliation: _____

Purpose of Visit: DARYL MOORE TSP

If alarm response, type of alarm and resolution: BACK FLUSH SYSTEM, CHANGE OUT SOCK FILTERS, CHECK FUSES IN PANEL, TOP FLOOR.

Condition of entrance gate locks: NO / ALARM

Any sign of vandalism: GOOD COND. # 2126

Security system: Disarmed upon arrival: Y / N

Armed upon departure: Y / N

Unit heater: ON / OFF

Control settings: # 6

Exhaust fan: ON / OFF

Control settings: AUTO

Liquid in floor sump: Y / N

If yes, how many (inches): 0

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y / N

If yes describe: _____

System settings appropriate for seasons: Y / N

System settings appropriate for seasons: Y / N

Disposal Method: wet well or other: WET WELL

Date	Outdoor Temp. (°F)	Indoor Temp. (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y/N)	Top/Bottom Influent Filter (1 µm) (psi)
12-2-22	37	75	28190.6	38859.9	409,467.2	2.32	OPEN	NO	31/37	YES	32/36
Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y/N)	Effluent Filter (25/50µm) (psi)	Autodialer functional? (Y/N)	Overflow Indicator Reset (Y/N)	System Backflush? Vessel #	Filter Changed? (Y/N)	
34	29	24	11	11	YES	7/7	YES	NO	BACK FLUSH 1,2,3,4	YES	

Notes: REMOVE PUMP #2 FROM WET WELL TO BE REPAIRED.

WET WELL 34.8

PROPANE 7679

**Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit**

Date: 12/5/2022

Arrival Time: 7:30

Departure Time: 12:30

Weather: 28° overcast

Personnel and Affiliation: T. Deaks TSP

Purpose of Visit: QIM

If alarm response, type of alarm and resolution: —

Condition of entrance gate locks: Good

Any sign of vandalism: Y / ☒ N If yes, describe: —

Security system: Disarmed upon arrival: ☒ / N

Armed upon departure: ☒ / N Comments: —

Unit heater: ☒ / OFF

Control settings: #1

System settings appropriate for seasons: ☒ / N

Exhaust fan: ☒ / OFF Control settings: Auto

System settings appropriate for seasons: ☒ / N

Liquid in floor sump: Y / ☒ N If yes, how many (inches): —

Disposal Method: wet well or other: —

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y / ☒ N If yes describe: —

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12/5	28	69	2840.6	3889.7	409485.6	2.32	OPEN	N	48/50	Y	46/44

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y / N)	System Backflush? Vessel #	Filter Changed? (Y / N)
48	30	12	8	2.5	Y	2.5	Y	Y	N	12,34	Y

Notes: —

**Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit**

Date: 12/9/2022

Arrival Time: 6:30

Departure Time: 4:00

Weather: 29° overcast

Personnel and Affiliation: J. Jenkins JR

Purpose of Visit: QIM and attempt gas monitoring to flag working

If alarm response, type of alarm and resolution: —

Condition of entrance gate locks: Good

Any sign of vandalism: Y / N If yes, describe: —

Security system: Disarmed upon arrival: Y / N

Armed upon departure: Y / N

Unit heater: ON / OFF

Control settings: #7 Comments: —

Exhaust fan: ON / OFF Control settings: Auto System settings appropriate for seasons: Y / N

Liquid in floor sump: Y / N If yes, how many (inches): — Disposal Method: wet well or other: —

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y / N If yes describe: —

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12/9	29	72	2810.6	38425.8	410546.8	2.32	OPEN	N	52/56	Y	50/54

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y / N)	System Backflush? Vessel #	Filter Changed? (Y / N)
50	32	10	8	2.5	Y	25	Y	Y	N	1234	Y

Notes: _____

Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit

Date: 12/12/2022

Arrival Time: 7:30

Departure Time: 12:30

Weather: 33 Sunny

Personnel and Affiliation: J. Jenkins ISP

Purpose of Visit: OLM

If alarm response, type of alarm and resolution: Good

Condition of entrance gate locks: Good

Any sign of vandalism: Y / N If yes, describe: —

Security system: Disarmed upon arrival: Y / N

Armed upon departure: Y / N

Unit heater: ON / OFF

Control settings: 27

Exhaust fan: ON / OFF

Liquid in floor sump: Y / N

If yes, how many (inches): —

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y / N

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

System settings appropriate for seasons: Y / N

System settings appropriate for seasons: Y / N

Disposal Method: wet well or other: —

If yes describe: —

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12/12	33	70	2890.6	3895.6	41098.7	2.32	OPEN	N	50/52	Y	50/52

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y / N)	System Backflush? Vessel #	Filter Changed? (Y / N)
50	30	10	6	2.5	Y	2.5	Y	Y	N	1,2,3,4	Y

Notes:

**Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit**

12-16-2022

Date:

Arrival Time: 7:00

Departure Time: 12:30

Weather: 30°F Overcast

Personnel and Affiliation: J. Jenkins JR

Purpose of Visit: O&M

If alarm response, type of alarm and resolution: —

Condition of entrance gate locks: Good

Any sign of vandalism: Y / ☒ N

Security system: Disarmed upon arrival: ☒ / N

Armed upon departure: ☒ / N

Unit heater: ☒ ON / OFF

Control settings: #8

Exhaust fan: ☒ ON / OFF

Liquid in floor sump: Y / ☒ N

Inspect integrity of connections and flexible hoses - failure signs or cracks: Y / ☒ N

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

System settings appropriate for seasons: ☒ Y / N

Disposal Method: wet well or other: wet well

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12-16-22	30	68	28190.6	39013.2	411706.8	2.32	OPEN	N	40/42	Y	38/40

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y / N)	System Backflush? Vessel #	Filter Changed? (Y / N)
48	28	10	6	4	Y	2.5	Y	Y	N	1,2,3,4	Y

Notes:

**Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit**

Date: 12-19-2022

Arrival Time: 7:30

Departure Time: 12:30

Weather: 18° cold

Personnel and Affiliation: J. Jenkins TSB

Purpose of Visit: OLM

If alarm response, type of alarm and resolution: Good

Condition of entrance gate locks: Good

Any sign of vandalism: Y / N If yes, describe: —

Security system: Disarmed upon arrival: Y / N

Armed upon departure: Y / N Comments: —

Unit heater: ON / OFF

Control settings: #8 System settings appropriate for seasons: Y / N

Exhaust fan: ON / OFF Control settings: Auto System settings appropriate for seasons: Y / N

Liquid in floor sump: Y / N If yes, how many (inches): — Disposal Method: wet well or other: WW

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y (N) If yes describe: —

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12-19-22	18	62	28202.4	34023.9	411706.8	2.32	OPEN	N	36/38	Y	36/40

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y / N)	System Backflush? Vessel #	Filter Changed? (Y / N)
46	30	12	8	4	Y	2.5	Y	Y	N	1234	Y

Notes:

There was a problem at the inlet. Note Totalized Flow was same as last OLM. Mike H. and I fixed the pipe that was clogged and restored flow.

Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit

Date: 12-22-2022

Arrival Time: 7:30

Departure Time: 12:00

Weather: 8° cold

Personnel and Affiliation: T. Banks / TR

Purpose of Visit: O&M

If alarm response, type of alarm and resolution: —

Condition of entrance gate locks: Good

Any sign of vandalism: Y / ☒ N

Security system: Disarmed upon arrival: ☒ / N

Armed upon departure: ☒ / N

Unit heater: ON / OFF

Control settings: #7

Exhaust fan: ON / OFF

Liquid in floor sump: Y / ☒ N

Control settings: Auto

If yes, how many (inches): —

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y / ☒ N

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

System settings appropriate for seasons: ☒ / N

System settings appropriate for seasons: ☒ / N

Disposal Method: wet well or other: wet well

If yes describe: —

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12-22-22	8	59	28240.5	39072.0	412450.9	2.32	OFF	N	40/42	Y	38/40

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y / N)	System Backflush? Vessel #	Filter Changed? (Y / N)
46	28	14	3	4	Y	2.5	Y	Y	N	1,2,3,4	Y

Notes:

**Closed Waterford Hills Sanitary Landfill Site
Leachate Pretreatment System Operations and Maintenance
Site Inspection Form for Each Visit**

Date: 12-27-2022

Arrival Time: 7:30

Departure Time: 12:30

Weather: 13°C

Personnel and Affiliation: J. TANKS TSP

Purpose of Visit: DCM

If alarm response, type of alarm and resolution: —

Condition of entrance gate locks: Good

Any sign of vandalism: Y / ☒ N

Security system: Disarmed upon arrival: ☒ / N

Armed upon departure: ☒ / N

Unit heater: ☒ OFF

Control settings: #7

Exhaust fan: ☒ OFF

Control settings: Auto

Liquid in floor sump: Y / ☒ N

If yes, how many (inches): —

Inspect integrity of connections and flexible hoses- failure signs or cracks: Y ☒ N

If adjustment made to flow control valve, record new flow rate and Pressures on second sheet. Attached: —

System settings appropriate for seasons: ☒ / N

System settings appropriate for seasons: ☒ / N

Disposal Method: wet well or other: wet well

If yes describe: —

Date	Outdoor Temp. (°F)	Indoor Temp (°F)	Pump 1 Run Time (hours)	Pump 2 Run Time (hours)	Totalized Flow Readings (ft³)	Instantaneous Flow Rate (cfm or OFF)	Flow Control Valve Position (1/4, 1/2, 3/4 or open)	Flow Control Valve Adjustment (Y/N)	Top/Bottom Influent Filter (10 µm) (psi)	Filter Changed? (Y / N)	Top/Bottom Influent Filter (1 µm) (psi)
12-27-22	13	68	25278.6	39121.2	413243.6	2.32	OPEN	N	38/40	Y	36/38

Vessel #1 (psi)	Vessel #2 (psi)	Vessel #3 (psi)	Vessel #4 (psi)	Effluent Pressure (1 µm) (psi)	Filter Changed? (Y / N)	Effluent Filter (25/50µm) (psi)	Filter Changed? (Y / N)	Autodialer functional? (Y / N)	Overflow Indicator Reset (Y/N)	System Backflush? Vessel #	Filter Changed? (Y / N)
43	28	12	8	2.5	Y	2.5	Y	Y	N	1,2,3,4	Y

Notes:

**CLOSED WATERFORD HILLS SANITARY LANDFILL
LANDFILL GAS EXTRACTION SYSTEM
MONITORING REPORT FORM**

DATE: 12/14/22
 WEATHER: COLD OVERCAST 34'
 BAROMETRIC PRESSURE at START:
 AMBIENT TEMPERATURE:

ON-SITE PERSONNEL:

MIKE HUNTER

ALLEN

Blower Operation Data

Blower 1 Run-Time NOT ON N-A hrs

Amperage N-A

Flow N-A CFM

Blower 2 Run-Time 49.3 hrs

Amperage 18

Flow 4.9 CFM

Gas Reading	Time	% CH ₄	% CO ₂	% O ₂	% Balance Gas	Inline Blower Inlet Temp (Deg F)
Blower Inlet	<u>10:00</u>	<u>44.5</u>	<u>29.1</u>	<u>4.5</u>	<u>21.6</u>	<u>1000</u>

Flare Temperature (Deg F)
<u>1000</u>

	Pressure Reading (Inches H ₂ O)
Before Blowers (from above)	<u>0.1</u>
After Blowers	<u>-0.0293</u>

STAT

DIFF

	Bearing Inlet Temperature (Deg F)	Bearing Outlet Temperature (Deg F)	Bearing Inlet Vibration (Inches/sec)	Bearing Outlet Vibration (Inches/sec)
Blower No. 1				
Blower No. 2				

Condensate Sump Operation Data

Condensate Pump 1 Run-Time 1 hrs

Condensate Pump 2 Run-Time 2 hrs

Nitrogen Tank Level (psi)

Right Gauge

1700 PSI

Left Gauge

110 PSI

Propane Tank Capacity %

70%

Notes:

**CLOSED WATERFORD HILLS SANITARY LANDFILL SITE - LANDFILL GAS EXTRACTION SYSTEM
MONITORING REPORT FORM**

DATE: 12/14/22

WEATHER: Overcast

AMBIENT TEMPERATURE: 34° stat

BAROMETRIC PRESSURE at START:

ON-SITE PERSONNEL: Michael

D.A.C.

WELL ID	Time	PRESSURE (inches H ₂ O)	% CH ₄	% CO ₂	% O ₂	% Balance Gas	Temperature (Deg F)	FLOW (scfm)	BAROMETRIC PRESSURE (inches Hg)	Adjustments, Well Condition, Notes
GW-1	10:14	0.89	54.1	33.1	0.3	12.1	70		-1.083	Flex tube off NDP is destroyed
GW-2		0.02	66.9	31.8	0.4	0.0	40		-1.013	NEED CLAMP ON FLEX TUBE BROWN HANDLE
GW-3		0.02	62.8	33.3	0.3	3.1	60		0.175	
GW-4		0.46	62.8	33.2	0.2	3.0	40		-1.460	
GW-5		0.40	58.9	40.3	0.0	0.0	70		-1.409	
GW-6		1.03	59.0	39.4	0.4	0.0	70		-1.103	
GW-7		0.06	59.1	38.4	0.0	1.3	00		-1.013	
GW-8		-1.09	51.7	32.1	0.0	16.3	70		1.236	B.g hole in pipe
GW-9		0.67	56.9	42.0	0.2	0.0	70		-1.083	
GW-10		1.53	54.9	44.2	0.3	0.0	30		-1.408	
GW-11		0.00	58.7	41.1	0.0	0.0	40		0.170	
GW-12		-0.22	57.9	33.9	0.4	7.9			0.355	Temp Gauge
GW-13		0.65	57.6	41.4	0.3	0.0	90		-0.609	Re clamp
GW-14		1.30	55.2	43.9	0.2	0.0	90		-1.335	
GW-15		1.16	58.2	40.8	0.0	0.0	101		-0.804	Temp Gauge
GW-16		-1.13	60.2	35.9	0.3	1.8			1.137	
GW-17		0.63	58.9	36.5	0.0	4.5	84		-0.361	
GW-18		0.74	57.6	34.9	0.4	1.1	81		-0.246	
GW-19		0.07	60.0	34.3	0.0	5.7	71		0.502	
GW-20		-0.04	62.5	35.3	0.0	1.0			0.106	Temp Gauge
GW-21		-0.87	38.1	19.9	0.4	41.3	165		0.402	Cluck clamp
GW-22		-1.45	32.4	18.6	0.7	48.3	34		1.290	
GW-23		0.71	52.3	25.5	0.0	21.0	59		-0.522	
GW-24		0.46	43.0	24.3	0.0	33.4	39		-0.456	
GW-25		-1.09	44.5	21.9	0.0	32.7	41		1.258	
GW-26		-2.15	37.1	12.3	3.4	41.9	64		2.372	
GW-27		-3.81	22.8	14.9	8.2	53.6	33		3.157	
GW-28		-1.57	53.6	28.5	0.0	18.1	68		1.522	
GW-29		-1.64	51.9	21.2	1.0	24.0	31		1.479	
GW-30		-1.17	45.9	22.2	0.7	30.6	65		2.048	
GW-31		-1.58	60.3	23.9	0.0	15.5	49		5.81	
GW-32	2:30	-1.86	59.6	27.6	0.6	7.7	39		2.162	

Notes: (Include descriptions of any wells having damage)

CLOSED WATERFORD HILLS SANITARY LANDFILL SITE **LANDFILL GAS EXTRACTION SYSTEM**

DATE: 12.16.2022
 WEATHER: OVERCAST
 BAROMETRIC PRESSURE at START:
 AMBIENT TEMPERATURE: 35°

ON-SITE PERSONNEL:
 MICHAEL HUNTER (TSP)
 ALLEN (ERG)

STATIC

DIFF

WELL ID	Time	PRESSURE (inches H ₂ O)	% CH ₄	% CO ₂	% O ₂	% Balance Gas	BAROMETRIC PRESSURE (inches Hg)
LFG-1S		-0.01	0.0	6.9	13.7	79.3	0.005
LFG-1D		-0.02	0.0	6.5	14.0	78.2	0.007
LFG-2S		0.01	2.0	2.0	19.7	78.3	0.002
LFG-2D		0.00	0.0	2.6	18.8	78.3	0.006
LFG-3S	8:43	-0.01	0.0	1.5	19.7	78.8	0.001
LFG-3D		-0.01	0.0	2.3	19.1	78.6	0.004
LFG-4S		0.00	0.0	5.8	14.4	78.7	0.003
LFG-4D		-0.01	0.2	4.9	10.1	79.8	0.013
LFG-5S		0.00	11.1	20.9	1.7	65.6	0.002
LFG-5D		0.01	3.2	15.1	5.9	73.7	0.014
LFG-6S		-0.03	0.0	3.5	16.7	79.5	0.012
LFG-6D		0.00	0.0	4.8	16.0	79.2	0.003
LFG-7S		0.00	0.0	2.4	18.8	78.8	-0.006
LFG-7D		-0.01	0.0	1.9	19.8	78.3	-0.006
LFG-8S		-0.02	0.0	3.3	18.0	78.1	-0.011
LFG-8D		-0.00	0.0	1.4	19.1	79.0	0.013
LFG-9S		-0.01	0.0	3.7	18.9	77.3	0.001
LFG-9D		0.01	0.0	2.4	19.5	77.9	-0.004
LFG-10S	NEED Repair						
LFG-10D	NEED Repair						
LFG-11S		0.000	0.0	7.4	13.6	78.8	-0.006
LFG-11D	NEED Repair						
LFG-12S		-0.03	0.0	1.0	21.1	77.9	-0.003

- Tighten
 - Loose

Notes:

USE LONG SHANK LOCK ON #9
 CLEAR SCREWS ON #4
 Vehicle Gate west of flare

7-8-22 with Steve Meeting / System Check

WW/C 53.1 Bldg 8SF

BAG 1 45.50

BAG 2 44.48

GAC 1 44.25

GAC 2 23.5

BAG 3 11

BAG 4 9

RESIN 8.25

1) Bulletin for jetting manholes, cleaning

manhole / DISPOSE

2) NEW PM - GREEN McCLEARY - SANICEM 100

3) ALLISON PARTS? - FORT GRANT

totalizer - 380927.8

flow rate - 3.97

52

7/26/22 2nd Half WW/PFAS COMPLIANCE

8:30 OUSURE. SETUP FOR SAMPLING

9:00 COLLECTED 1ST INTERVAL WW COMP

10:00 COLLECTED 2ND INTERVAL WW COMP

10:15 COLLECTED SAMPLE MANHOLE - GRAB

pH = 7.55 pH is measured using

EPA STD 4300-B and meets ASTM

E70-07 STD.

11:00 Collected 3rd interval WW comp

10:45 Collected PFAS MONTHLY SAMPLE MANHOLE - GRAB

10:47 " " " " FIELD BLANK

11:17 " " " " INT-3

11:18 " " " " INT-2

11:19 " " " " INT-1

11:20 " " " " INF

WW/C 19.7 Bldg 82°F PP2

BAG 1 45.51

BAG 2 44.5, 48.5

GAC 1 45

GAC 2 24.5

GAC 3 9.5

BAG 3 8

RESIN 7

BAG 4 1.45

totalizer 385771.114

flow rate 3.31

12:00 Collected 4th interval WW comp

53

8-23-22

ww/L 21.8 upon arrival
bldg temp 84 °F

Top Bottom

Bag 1 47.5 55

Bag 2 49 53

GAC 1 51

GAC 2 23.25

GAC 3 7.25

Bag 3 6.5

Resin 55

totalizer 391900.634

flow rate 2.65

PFAS Collection:

13:55 Sample Manhole and DVP-01 collected

14:25 INT-3 collected

14:30 INT-2 collected

14:35 INT-1 collected

15:10 INF collected

9-20-22 PFAS Performance Monitoring

ww/L 18.6" upon arrival
bldg temp 80 °F

Top Bottom

Bag 1 41.5, 49

Bag 2 44.5, 47.5

GAC 1 45.5

GAC 2 30.5

GAC 3 9.5

Bag 3 8.0

Resin 6.0

Bag 4 1.5

totalizer 397,424.368

flow rate 2.65

PFAS Collection Times

13:15 Sample Manhole

13:31 INT-3

13:28 INT-2

13:25 INT-1

13:34 INF

12:55 FB

} purged for 2 min

14:18 AT Place; not running. SAZ/cu shaker Place and it shut off @ 2:15 of will wait for 2nd try. Then offside.

PFAS MONITORING

arrived. purged. ~ 9:30

Test PFAS samples.

Sample Manifold - DUP-01

40. stopped purging waiting for

man.

WLL 20.3

purged vessels 1 INFLUENT 2 min

INT-3

INT-2

INT-1

INF

Bldg Temp 62°F

5, 51

0.5, 50

8.25

0.25

.25

7.0

1.0

451.5 LLL

402, 154, 896

rate 1.98

11/18/22 PFAS MONITORING

WLL 20.7 upon arrival

Bldg Temp 68°F

PAG 1 45, 52

PAG 2 47, 51

GAC 1 49.0

GAC 2 32.75

GAC 3 17.25

BAG 3 4.75

PESIN 3.75

BAG 4 1.4

totalizer 407,100.4 53 ft³ (gpm)

flowrate 1.65 gpm

PFAS Collection

1005 Collected Sample Manifold + FB

1008 FB collected

1020 INT-3 " } purged back vessel for 2 min

1021 INT-2 "

1023 INT-1 "

1024 INF "

11:20 AT FLARE. OFF. TEXTEN

PLAN (TSP) TO TRANSCULEST

DURING DISM TOMORROW.

MONITORING / TREATMENT SYSTEM CHECK

1.4"

62°F

36.5, 43 (10 micron)

38, 42 (1 micron)

LED OFF.

FLARE BEFORE TREATMENT IS OFF. E-STOP RESET ARE ALL RHAMAN TSP. HE WILL TO CAME TO SITE.

AT FLARE. EDG ON WAY GEM SOND. WAS SUCCESSFUL.

FLARE. FUM SOND WHEM

ON STABED THE CO₂ SENSOR WORKING ON. CANNOT USE THE

TO CAL BUT SELF TEST CALLED GEOTECH. WILL SEND

R AND GET REPLACEMENT

WE WORK ASHTR TRYING TO ARE ON BLOWER #1 SYSTEM.

POWERER ON. CALLED RAN TSP

SURE WE CAN TRY BLOWER #2 SYSTEM TO TROUBLESHOOT.

TSP IF THEY CAN OPEN UP

WELLS TO INCREASING FLOW.

12/5/22 WNT. FLARE

TRISHA (ERG), IAN (TSP) WENT TO CLOSEST WELLS AND TOOK NOTES TO SHOW WHICH WELLS WOULD BE OPENED OUR MADE TO POSSIBLY INCREASE THE FLOW.

WILL ON PHONE W/ RTR TO GIVE UPDATE. WILL WORK AT JULY'S DATA TO LOOK AT GW'S W/ T CHY TO OPEN THESE UP MORE. TOTAL OF 10 EXTRA WELLS WILL BE OPENED.

TRISHA IAN DOING THIS, WE GETTING REMISS CHECKED AND REPAIRING WITH RENTAL.

GAS MONITORING WILL COMMENCE TUES/WEDS IF FLARE CONTINUES TO STAY ON.

PFAS MONITORING AND GAS MONITORING

18.2 upon arrival. Pump off.

ONSITE. GAC HUM GEM/FIELD

N AT GWS COLLECTING. ERT WAITING

PUMP TO TURNED FOR PFAS.

ample Manhole collected

up-01 collected

NT-3 collected

NT-2 "

NT-1 "

UF "

Purged
for 2
min each

12/15/22 system check

WU 20.7 upon arrival temp 67°F

BAG 1 43, 49

BAG 2 44, 48

GAC 1 46.5

GAC 2 29

GAC 3 13

BAG 3 5.25

Resin 4.50

BAG 4 1.4

totalizer 411563.9

flow rate 1.32

Composite Sample

TE TO SETUP SAMPLER

ONSITE PLOWING IN

T OF BUG AND WET WARE
NG AREA.

SET SAMPLER

ml/hr for 24-HR COMP.

GO BUG

ITE.

12/28/22 2ND HATCH COMPOSITE ONLY RE-SAMPLE

10:20 WUL 18.4 pumped

PUMP OFF. (as I arrived - 505)

TSP doing well repairs at the landfill.

10:35 PULSED SAMPLE OUT OF MANHOLE

LINE IN. CHECKED FOR WATER.

10:49 PUMP ON 18.2 WUL

BAG 1 51, 58

BAG 2 52.5, 56

GAC1 PUMP OFF - PUMP ON MINUTES LATER

10:57 CALLED MIKE (PSP) TO INQUIRE WITH

THE PUMP IS GOING ON THEN OFF THEN

ON AT ~ 18.4-18.2 WUL. HE STATED

HE DID IT YESTERDAY AND THAT

THE FORCE MAIN WAS COMPLETELY CLOGGED.

BUT HE WILL LOOK AT PUMP / SYSTEM TODAY.

PUMP OFF AGAIN.

11:09 PUMP ON AT ~ 18.6 WUL

FORCE MAIN CLOGGED NEEDS TO BE CLEARED

HAS NEVER BEEN CLEARED. MIKE SAYS INSURE

OF A 1" LINE; WATER IS RUNNING

THROUGH ~ 1/4" SPACE. HE STATED THAT NOW.

11:15 PUMP OFF 18.2 WUL

11:16 PUMP ON - THE SAMPLE MANHOLE LINE WAS

DISCONNECTED. CAME TO BUNK PUMP OFF

11:18-11:19 PUMP ON THEN OFF WUL 1 MINUTE

18.2 WUL

TEXTED MIKE. LEAVING BUG TO PROCEED

FOR SAMPLING.

11:30 Collected sample near Link-camp

Cleaned up area

At Flare to check methan

12:00 AT 1 min - CH₄ = 43.0%

FLARE IS QUIET COMPARED TO PREVIOUS

VISITS EARLY/MID YEAR

AT 2 min CH₄ = 43.5%

C O₂ = 29.2%

O₂ = 4.4%

BAU = 23.2%

STATIC = 0.27

DIFF = -0.296

12:11 LEAVING FLARE. HEADED TO LABS.

TECHNICAL PROPOSAL

PART 2 OF 2



ATTACHMENT 2

FIELD ACTIVITY LOGS AND PROGRESS REPORTS (2 of 2)



EXAMPLES FOR PROJECT 3



[illegible]

Signature:

Date: 16/5/22

Page:

of

Reviewed by:

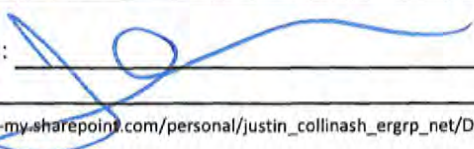


Signature: _____ Date: 11/1/22 Page: 1 of 1
Reviewed by: _____



DAILY FIELD REPORT

Project Name: Memphis Shell		Date of Site Activity: 11/2/2022	
Project Number: 1117		Site Location: 80521 Main St, Memphis, MI	
Weather AM: Sunny, 48°F		Weather PM: Sunny, 55°F	
ERG Employees: JEC, KJS			
ERG Equipment: Submersible pump(x2), WLM(x2), Total Mileage: 151			
AguaTroll(x2)			
Contractors on-site working for ERG:		Contractors Employees:	
Contractors Equipment:			
Visitors:			
Objective/Scope of Work: low-flow sampling of MWs			
Site Activity:			
TIME:			
8:25	Arrived on site. Unload/ setup equipment.		
8:40	Calibrated AguaTrolls		
9:10	JEC collects sample from MW-3 via bailer, KJS began low-flow sampling		
9:25	JEC collected field ^{eq} blanks from submersible pump equipment		
9:35	JEC began low-flow sampling.		
11:05	Completed low-flow sampling of MWs. Load up equipment. All pugged GW/decon water left in drums on site. Two full liquid drums currently on site		
11:40	Left site		

Signature: 

Date: 11/2/22

Page: 1 of 1

Reviewed by:

Table 1 - Groundwater Elevation Table
Memphis Shell - Memphis, Michigan
October 31, 2022
ERG Project No.: 1117.703



Well ID	Depth to Water (ft.)	Well Depth to Bottom (ft.)	Well Top of Casing Elevation (ft.)	DEPTH TO FREE PRODUCT (ft.)	FREE PRODUCT THICKNESS (ft.)	Notes
MW-01	42.99	45.03	759.85			
MW-02	43.01	44.78	759.43			
MW-03	43.29	45.08	--			
MW-04	--	44.92	759.89	--	--	Cannot Locate/Destroyed
MW-06	44.23	45.56	758.78			
MW-07	42.11	44.51	759.52			
MW-08	42.10	44.13	759.33			
MW-09	42.56	45.10	758.74			
MW-10	44.33	51.55	758.79			
MW-11	44.16	47.95	758.76			
MW-12	44.68	48.07	759.20			
MW-13	44.01	45.86	758.62			
MW-14	34.02	38.33	759.75			
MW-15	44.29	49.35	759.30			
MW-16	45.14	48.13	759.02			
MW-17	45.27	48.17	759.24			
MW-18	45.02	48.58	759.11	45.02	0.01	
MW-19	45.64	49.77	759.77			
MW-20	44.98	47.45	758.80			
MW-21	44.73	46.27	758.26			
MW-22	44.45	48.56	757.92			
MW-23	44.11	48.22	758.47			
MW-24	44.09	46.85	758.15			
MW-25	46.37	49.33	760.16			
MW-26	42.55	47.55	--	42.54	0.01	
MW-27	44.97	48.6	757.74			
MW-28	43.45	45.2	756.61			
IW-1	42.84	51.30	--			
IW-2	42.57	49.25	--			
IW-3	42.74	48.16	--			
IW-4	42.56	48.21	--			
IW-5	43.07	48.77	--			
IW-6	43.18	47.51	--			
IW-7	42.80	48.28	--			
IW-8	44.38	49.93	--			
IW-9	44.54	49.81	--			
IW-10	44.34	49.07	--			
IW-11	44.50	49.64	--			
IW-12	44.84	49.37	--			
IW-13	45.05	50.32	--			
IW-14	44.52	50.33	--	44.47	0.05	
IW-15	44.60	51.09	--			
IW-16	45.20	50.57	--			
IW-17	44.66	49.27	--			
IW-18	44.49	49.61	--			
IW-19	44.32	49.65	--			
IW-20	44.57	50.45	--			

45.27 44.01
44.11 46.37

GAS MONITORING LOG--MEMPHIS SHELL

PROJECT NUMBER: 1117.703

LOCATION: 80521 Main St, Memphis, Michigan

ONSITE PERSONNEL: JEC, KJS



Environmental Resources Group
28003 Center Oaks Court • Suite 106 • Wilson, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

Barometric pressure:

Temperature:

Barometric Pressure Trend (rising/falling):

Wind Speed/Direction:

DATE	TIME	WELL ID	PURGE TIME (MIN)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	BALANCE GAS (%)	SP (in H ₂ O)	DP (in H ₂ O)	NOTES
10/31/22	12:25	MW-17	4	0.0	13.6	4.9	81.5			
10/31/22	12:30	MW-23	4	0.0	16.5	0.7	82.7			
10/31/22	12:15	MW-24	3	0.1	7.7	12.3	79.9			
10/31/22	12:20	MW-25	3	0.0	6.3	14.1	79.6			

CLIENT: Memphis Shell		MONITORING LOCATION:							
LOCATION: Memphis, MI		SAMPLE ID: MW- 3							
PROJECT NO: 1117		WELL TYPE: Flush Mounted							
EVENT: Q4 2022 GW Sampling		KEY NO:							
Weather/Temp.:									
INSPECTION									
Label on well? YES / NO / REMEDIED		Is cement pad in good repair? YES / NO / REMEDIED							
Is reference mark visible? YES / NO / REMEDIED		Is protective casing locked and in good repair? YES / NO / REMEDIED							
Standing water present? YES / NO / REMEDIED		Is inner cap in place and properly sealing well? YES / NO / REMEDIED							
Indication of surface runoff in well? YES / NO / REMEDIED		Is well casing in visibly good repair? YES / NO / REMEDIED							
Repair Notes:									
STATIC WATER LEVEL		TIME:							
DATE: 10/31/22									
Top of Casing Elevation: ft		Measured with: Electronic tape / Chalked tape / Other:							
Depth to Water: 43.29 ft		Well depth verified? YES / NO							
Elevation of Water: ft									
WELL PURGING		TIME:							
DATE:									
Purge Method: PERISTALTIC / BLADDER / MICRO BLADDER / OTHER: Submersible pump		Pump intake @ 44.5 ft from TOC or bottom							
Equipment No.:									
Measured well depth: 45.08'		Screen length: 5'							
Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (mL/min)	pH (S.U.)	Temp (°C)	Spec Cond (ms/cm)	RDO (mg/L)	Turbidity (NTU)	ORP (mV)
<p>*WAL WENT DRY DURING INITIAL *SAMPLED VIA BAILEY ON 11/2/22</p>									
Shoen in bailer pull or purge bucket: Present / Absent (circle one)									
Volume: (Gallons)	Stabilization Criteria:	±0.1	±3%	±3%	±0.3 mg/L	±10% for values >20	±10 mV		
SAMPLE COLLECTION		DATE:		TIME:					
Sample appearance:				Duplicate sample collected?		YES / NO			
Collection method: PERISTALTIC / BLADDER / MICRO BLADDER / OTHER: Submersible pump				MS/MSD sample collected?		YES / NO			
Equipment No.:				Chain of Custody Number:					
Filter used: 0.45 µm (8100) / 0.45 µm (8200) / NONE									
Quantity	Size	Type	Filtered	Preservative				Parameters	
	40 mL	Glass	Yes (NO)	None	(HCl)	HNO ₃	H ₂ SO ₄	NaOH	VOCs
	125 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	250 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	250 mL	Glass	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	500 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	500 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	1000 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	1000 mL	Glass	Yes (NO)	(None)	HCl	HNO ₃	H ₂ SO ₄	NaOH	PNAs
SAMPLING PERSONNEL									
Name (SIGNATURE): JUSTIN COLLINGS					Name (SIGNATURE):				

[illegible]

[illegible]

GROUNDWATER SAMPLE COLLECTION FORM - LOW FLOW

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

CIENT:		<u>Memphis Shell</u>	MONITORING LOCATION:		<u>E of house</u>				
LOCATION:		<u>Memphis, MI</u>	SAMPLE ID:		<u>MW-22</u>				
PROJECT NO:		<u>1117</u>	WELL TYPE:		<u>Flush Mounted</u>				
EVENT:		<u>Q4 2022 GW Sampling</u>	KEY NO:		<u> </u>				
Weather/Temp.:									
INSPECTION									
Label on well?		<u>YES</u> / NO / REMEDIED	Is cement pad in good repair?		<u>YES</u> / NO / REMEDIED				
Is reference mark visible?		<u>YES</u> / NO / REMEDIED	Is protective casing locked and in good repair?		<u>YES</u> / NO / REMEDIED				
Standing water present?		<u>YES</u> / NO / REMEDIED	Is inner cap in place and properly sealing well?		<u>YES</u> / NO / REMEDIED				
Indication of surface runoff in well?		<u>YES</u> / NO / REMEDIED	Is well casing in visibly good repair?		<u>YES</u> / NO / REMEDIED				
Repair Notes:									
STATIC WATER LEVEL		DATE: <u>10/31/22</u>	TIME:						
Top of Casing Elevation:		<u>ft</u>	Measured with: <u>Electronic tape</u> / Chalked tape / Other:						
Depth to Water:		<u>44.45</u> ft	Well depth verified? <u>YES</u> / NO						
Elevation of Water:		<u>ft</u>							
WELL PURGING		DATE: <u>11/1/22</u>	TIME: <u>9:55</u>						
Purge Method:		PERISTALTIC / BLADDER / MICRO BLADDER / OTHER:		Pump intake @ <u>46.51</u> ft <u>X</u> from TOC or bottom					
Equipment No.:		<u>Submersible pump</u>							
Measured well depth:		<u>48.56</u>	Screen length:						
Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (mL/min)	pH (S.U.)	Temp (°C)	Spec Cond (ms/cm)	RDO (mg/L)	Turbidity (NTU)	ORP (mV)
9:58	44.45	0	210	6.74	12.49	1264.7	3.45	822.91	83.3
10:01				6.71	13.02	1278.9	2.61	405.63	78.4
10:04				6.71	13.49	1275.8	2.88	252.60	74.3
10:07				6.71	13.50	1274.1	2.54	176.43	73.0
10:10				6.71	13.56	1277.7	2.53	154.43	72.2
10:13				6.70	14.20	1281.8	2.31	67.15	68.1
10:16				6.71	14.19	1276.7	2.40	40.12	63.6
10:19				6.71	14.07	1278.3	2.36	30.82	58.7
10:22				6.71	14.12	1278.2	2.31	12.14	52.1
10:25				6.71	13.96	1278.2	2.24	9.83	46.4
10:28				6.71	13.94	1278.6	2.17	7.11	43.0
<u>samples taken before stable, purged 30 mins</u>									
Shoen in bailer pull or purge bucket: Present / Absent (circle one) <u>Absent</u>									
Volume: (Gallons)		Stabilization Criteria:		±0.1	±3%	±3%	± 0.3 mg/L	±10% for values >20	±10 mV
SAMPLE COLLECTION		DATE: <u>11/1/22</u>		TIME: <u>10:28</u>					
Sample appearance:		<u>clear</u>				Duplicate sample collected?		YES / NO <u>NO</u>	
Collection method:		PERISTALTIC / BLADDER / MICRO BLADDER / OTHER:				MS/MSD sample collected?		YES / NO <u>NO</u>	
Equipment No.:		<u>Submersible pump</u>				Chain of Custody Number:			
Filter used:		<u>0.45 µm (8100) / 0.45 µm (8200) / NONE</u>							
Quantity	Size	Type	Filtered	Preservative				Parameters	
<u>3</u>	40 mL	Glass	Yes <u>(No)</u>	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	<u>VOCs</u>
	125 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	250 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	250 mL	Glass	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	500 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	500 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
	1000 mL	Plastic	Yes No	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	
<u>1</u>	1000 mL	Glass	Yes <u>(No)</u>	None	HCl	HNO ₃	H ₂ SO ₄	NaOH	<u>PNAs</u>
SAMPLING PERSONNEL									
Name (SIGNATURE): <u>Kelley J.</u>					Name (SIGNATURE):				

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Health & Safety Plan
MDEQ LOE Site #50001136
Memphis Shell
80521 Main Street
Memphis, Michigan
October 31- November 2, 2022

MDEQ LOE Site #50001171

Memphis Shell

*80521 Main Street
Memphis, Michigan*

SITE HEALTH AND SAFETY PLAN

Monitoring Well Gauging/Sampling and Gas Monitoring

October 31- November 2, 2022

Prepared by:

**Environmental Resources Group, LLC
28003 Center Oaks Ct. Suite 106
Wixom, Michigan 48393
(248) 773-7986**



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Health & Safety Plan
MDEQ LOE Site #50001136
Memphis Shell
80521 Main Street
Memphis, Michigan
October 31- November 2, 2022

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Health & Safety Plan
MDEQ LOE Site #50001136
Memphis Shell
80521 Main Street
Memphis, Michigan
October 31- November 2, 2022

**Memphis Shell (#50001171)
Memphis, Michigan Remedial Investigation (RI)**

SITE-SPECIFIC HEALTH AND SAFETY PLAN

1.0 SITE-SPECIFIC INFORMATION

The Michigan Department of Environmental Quality (MDEQ) has requested that Environmental Resources Group, LLC (ERG), conduct remedial investigation (RI) activities at the former Shell Gas Station (#50001171) in Memphis, Michigan (Figure 1). The work will be performed under the Level of Effort (LOE) contract between the MDEQ and ERG (MDEQ LOE RRD #8007). Per the Scope of Work provided to Wilcox by the MDEQ on June 27, 2012, the overall project goals are to complete an RI to determine the extent of soil and groundwater contamination at the site:

Site Address:
Memphis Shell
80521 Main Street
Memphis, Michigan

Client Address:
MDEQ RRD Livonia District
27700 Donald Court
Warren, MI 48092

Client Contact: Ms. Faye Mitchell at 586-753-3817

1.1 Emergency Telephone Numbers

Project Manager: Robert Zwald.....	(248) 773-7986
Cell phone	(734) 476-5933
RI Task Coordinator / SHSO: Robert Zwald.....	(248) 773-7986
Cell phone	(248) 330-7844
Senior Field Technician – Sampling: Charles Badgerow	(248) 773-7986
Cell phone	(734) 709-1448
Memphis Ambulance Service:	911
Local Fire Department: Memphis FD,	911
Direct Line.....	(810) 392-2185

Health & Safety Plan
MDEQ LOE Site #50001136
Memphis Shell
80521 Main Street
Memphis, Michigan
October 31- November 2, 2022

New Haven Medical Center,911
Direct Line..... (586) 749-5197
Michigan Department of Environmental Quality..... (586) 567-3500
Pollution Emergency Alert System (PEAS)..... (800) 292-4706

1.2 Emergency On-Site Care

The project site does not have an emergency care facility available. It is a vacant gas station surrounded by residential properties. The drilling and support vehicles are supplied with First Aid kits, fire extinguishers, and non-potable water. They are equipped to address minor, non-life threatening injuries. ERG employees have a cell phone(s) for emergency telephone calls.

1.3 Directions to **New Haven Medical Center**

The closest medical center (New Haven Medical Center) is located approximately 13.0 miles away at 58144 Gratiot Avenue, New Haven, Michigan. If at the vacant parcel, leave property travel south (right) along M-19. Turn right on Gratiot Avenue (M-19). The medical center will be on the left, enter the hospital. Follow "EMERGENCY ROOM" entrance signs. The attached map in Attachment A shows the route from the former Shell station to New Haven Medical Center, New Haven, MI.

2.0 PROJECT OBJECTIVE

The assessment of soil/groundwater impacts will support planned site remediation via excavation. A RI is proposed by ERG to assess the extent of impacts. Following the investigation, ERG will prepare a summary of the historical investigation along with the most recent sample results. This data will be used to prepare a remediation plan designed to eliminate any relevant threat to the public and the environment.

For this task, ERG proposes to sample 15 monitoring wells using low-flow sampling techniques and collect gas readings from 4 monitoring wells.

3.0 SITE HEALTH AND SAFETY RESPONSIBILITIES

3.1 Site Health and Safety Officer Responsibilities

Mr. Robert Zwald, or an alternate task designate will be acting site health and safety officer (SHSO) in the field on behalf of ERG. Charles Badgerow will be delegated as the alternate SHSO for the activity.

The Site Health and Safety Officer (SHSO) or an alternate designate is responsible for the

following:

- Enforcing health and safety regulations covering ERG employees.
- Implementation and monitoring of the Health and Safety Plan (HASP) as it relates to ERG Employees and its Subconsultants.
- Providing a copy of this HASP in a specified ERG / Sub consultant vehicle for reference in the event of an emergency situation.
- Education of site personnel with regard to HASP and safety requirements, including:
 - potential safety hazards;
 - personal hygiene principles;
 - personal protective equipment;
 - respiratory protective usage and fitting; and
 - emergency procedures dealing with fire and medical situations.
- Maintenance of personal protection and safety equipment to assure proper functioning and accessibility.
- Maintenance and separation of the exclusion, decontamination, and support zones, and enforcing proper decontamination procedures.
- Monitoring potentially hazardous conditions during site operations.
- Maintaining a daily log describing at least the following:
 - Personnel on location (include name of firm)
 - reason for site entry
 - description of activities performed by each person
 - documentation of any chemical exposure symptoms to workers while on location or after leaving the site
- Maintenance of site security by allowing only pre-authorized individuals, with proper training on site.
- Consulting with RI Manager and/or RI Task Coordinator on a routine basis to assure that the HASP procedures are implemented and adhered to.

3.2 RI Manager's Responsibilities

The RI Manager (Mr. Zwald) or as designated to the RI Coordinator is responsible for the following:

- Assuring that personnel are aware of the potential hazards of the site and the proper procedures for addressing hazardous situations should they arise.
- Assuring that required personal protective equipment is available and utilized properly by

team members.

- Consulting with the SHSO on a routine basis to assure that the procedures outlined in this plan are implemented and adhered to.
- Preparation and submittal of project reports, including progress, accident, and incident reports.

3.3 Field Personnel Responsibilities

Field Personnel are responsible for the following:

- Perform required tasks in a safe and efficient manner.
- Familiarize themselves and comprehend the HASP, including proper usage of protective equipment.
- Be aware of and report any unsafe conditions to supervisory personnel immediately.
- Be aware of signs and symptoms of potential exposure to site contaminants, fatigue, and heat or cold stress.

4.0 BRIEF SITE HISTORY

The site is approximately ten acres in size and is located near the intersection of Main Street and Benton Street in Memphis. The site is located in a commercial and residential area. The site is the location of a former Shell gasoline station. The leaking underground storage tanks appears to have caused free petroleum product, soil and groundwater contamination.

5.0 SITE HAZARD ASSESSMENT

5.1 Physical Hazards

The work to be performed under this HASP will take place in the south and east areas of a residential house that has well established grass and asphalt cover.

Vehicle hazards can be reduced by driving slowly. Make eye contact with the operator of vehicles or construction equipment, if working near by. Do not approach operating machinery unless you are part of the team performing the investigation. Keep the public away from such similar operations. Have all utilities located and marked before performing soil borings or installing monitoring wells. In power line or other utilities are around, be aware that they are present; and plan to avoid any potential hazards.

This project does not involve entry into any confined spaces. If such a condition arises, contact the SHSO for proper planning and safety protocols prior to entry.

5.2 Mandatory Personal Protection Equipment

ERG personnel working on or visiting the site must wear the following personal protection equipment (PPE) when on the project site:

- Hard hat
- Safety glasses
- Steel-toed boots
- Chemical resistant gloves
- Hearing protection, when necessary.

Failure to comply with these safety requirements will result in permanent removal from this project. No Exceptions.

5.3 Chemical Hazards

There are no known exposed solid or liquid chemicals or other hazardous materials on the surface of the residential lot or within the adjoining residential setting. However, the groundwater, although isolated from the surface, is impacted with gasoline and volatile organic compounds above Part 201 action levels. VOCs in the subsurface soils of the vacant property may have migrated off of the vacant parcel onto the adjacent property to some degree and distance. It is also possible that VOCs have dissolved in groundwater and is in groundwater monitoring wells that are in close proximity to the property boundary.

Personnel will be cautious of explosive hazards, flammability, skin adsorption, and inhalation routes of potential exposure on this site. Workers will stand up-wind of the source of contamination whenever possible, regardless of air concentrations or the lack of obvious odors. **No smoking or use of open flame within 50 feet of the monitoring wells.**

The contaminants of concern include heavy metals (cadmium, lead, and chromium) and gasoline related VOCs and PNAs. The contaminant level concentrations expected during this phase of the project are likely to be elevated near the free product; therefore, personnel involved with groundwater sampling and drilling and soil/groundwater sampling will be equipped with Level D personal protection equipment. In addition to the safety gear discussed in Section 6.2, disposable sampling gloves will be worn during soil and groundwater sampling. It is not likely that Level C equipment will be required during this RI investigation, however, if the SHSO determines that sufficient risk is present at the site, he will require upgrading to Level C protection. If liquid contact with clothing becomes apparent, polycoated Tyvek® suits will be donned.

5.4 Respiratory Protection

If respiratory protection is deemed to be required by the SHSO, the respiratory protection utilized on-site will be in compliance with OSHA 29 CFR 1910.134. All personnel engaged in an activity where respirators are required will wear an air-purifying type respirator. Upgrading or downgrading of personal protection will be made following consultation with the SHSO assigned to the project.

6.0 SITE ACCESS CONTROL

The SHSO shall authorize any ERG, sub consultant, subcontractor, or other personnel prior to entry into the exclusion zone. Any such persons will be outfitted with appropriate safety equipment in accordance with the applicable MDEQ, USEPA, MIOSHA, and OSHA safety guidelines. Personnel entering the site must register with the SHSO.

7.0 PERSONAL HYGIENE AND SAFETY

Personnel shall not eat, smoke, chew tobacco or gum on-site except in pre-approved areas. Fluids will be provided to the staff, however, fluids must be kept in sealed containers and not poured until ready to drink. The wearing of contact lenses is prohibited in the exclusion zone. ERG personnel are trained in monitoring and detecting the signs of heat stress or heat stroke, and frostbite. ERG employees will monitor each other to identify early signs of heat or cold related health problems to minimize or avoid such conditions or incidents.

No smoking or use of open flame within 50 feet of the existing monitoring wells.

8.0 DECONTAMINATION PROCEDURES

While accidental contact with harmful quantities of hazardous materials is unlikely, if contact occurs, the affected clothing will be removed and placed in a designated container for cleaning or disposal. Extra clothing and protective gear will be available on-site to replace any contaminated gear.

9.0 SITE EMERGENCY PROCEDURES

9.1 First Aid

A first aid kit will be present at the work site. The contents of the first aid kit will be checked daily by the SHSO and will be restocked as necessary. At least one person certified in first aid will be present at the site during all work activities. An ample supply of fresh water will be available for flushing contaminated boots, tools, and equipment. Prior to commencement of field activities, field personnel will review safety considerations with the SHSO.

9.2 Transport to Hospital

A vehicle will be available at all times for use of transporting injured personnel to the hospital, if appropriate, in the unlikely event of an accident requiring emergency medical attention. However, if the injury is serious and the injured person can not or should not be moved, call 911, and await the arrival of EMS personnel to take control of the injured person. All on-site personnel will be familiar with the route to the hospital.

9.3 Emergency Response

While the likelihood of an accidental spill or spread of contamination to outside areas is extremely low, each on-site worker will be instructed how to safely confine the release as quickly as possible. Contamination that spreads beyond the project boundaries will be cleaned immediately following the safe containment of the source. The SHSO will forward an incident report form to the Project Coordinator/Manager as soon as possible, however, not to exceed 24 hours from the time the incident occurred.

9.4 Emergency Services

The list of emergency telephone numbers presented in Section 1.1 of this document will be made readily available and accessible to all on-site personnel at all times. If in doubt, always call 911 for assistance.

9.5 Response to Potential Hazards

Accidents must be handled on a case-by-case basis. Minor cuts, bruises, muscle pulls, etc., still requires the injured person to follow proper decontamination procedures prior to receiving direct first aid. The nature and degree of contamination at the site will dictate the accessibility to emergency vehicles. Fire extinguishers and an air horn will be available in the decontamination area.

Contact with contaminated materials will be minimized due to strict adherence to established safety procedures and utilizing proper protective equipment. In the event of contact with contaminated material, standard first aid procedures will be implemented. An ample supply of fresh water will be available on-site to flush any exposed areas. In cases of major exposure that warrant additional action, the Poison Control Center and local hospital will be contacted. The injured person(s) will be taken immediately to the hospital for further treatment and observation.

9.6 Site Evacuation

In the event of fire or an explosion, the work crew will immediately evacuate the site and notify the appropriate local authorities of the emergency situation. The SHSO or alternate will take immediate charge of the evacuation process, making sure all personnel are accounted for, consider the nature of the emergency, severity of the emergency, wind direction, proximity to residential areas, and other relevant factors.

10.0 EMERGENCY MEDICAL CARE/LOCAL EMERGENCY CONTACT

Prior to beginning any field activities, nearby health facilities will be evaluated to determine their capabilities in relation to the potential needs of on-site project staff criteria, such as: emergency department physician coverage, decontamination capabilities, and the medical specialist's availability will be evaluated. All personnel associated with this project will be cognizant of the nearest telephone and the location of the site HASP, containing all relevant emergency telephone numbers.

11.0 SAFETY TRAINING

Prior to being authorized to work on this project, each employee will be required to have the 40-hour Hazardous Waste Site Operations Training in accordance with the requirements of the Hazardous Waste Site Training as stated in 29 CFR 1910.120, and have the necessary 8-hour refresher training. Furthermore, all field personnel will be trained in the area of safety protocol regarding the following issues: soil and groundwater sampling methods, proper decontamination procedures, first aid, CPR, and emergency response. The SHSO is responsible for making certain that all personnel in the exclusion zone are familiar with the safety and emergency response guidelines. At least one person qualified by the American Red Cross to perform first aid procedures will be present during all field activities. Should an accident occur, a safety incident report form must be completed and submitted, by the SHSO, to the Project Coordinator/Manager within 24-hours of the incident.

12.0 WEATHER-RELATED SAFETY ISSUES

ERG employees are provided with proper clothing and equipment to work in most weather conditions, however, work will cease immediately in the event of the following weather conditions:

- high temperatures causing heat stress, periodic rests in the shade and drink plenty of fluids.
- high winds/tornado activity
- electrical storms
- heavy rainfall

- wind chill factors of 20° below zero Fahrenheit
- ice storms

Other weather related problems may occur, that warrant stoppage of work. Common sense should be used in all weather related matters.

13.0 QUICK REFERENCE PROTECTIVE EQUIPMENT LIST

LEVEL D Protective equipment required at the discretion of the SHSO includes:

- coveralls
- safety glasses with side shields
- gloves
- steel-toed boots
- hard hat
- if necessary; Tyvek suits, respirator, face shield.

LEVEL C Protective equipment required at the discretion of the SHSO includes:

- coveralls
- safety glasses with side shields
- gloves
- steel-toed boots
- hard hat
- full face air purifying respirator, and escape mask (ELSA)
- chemical resistant clothing, gloves, boots
- disposable boot covers
- Tyvek suits
- two-way radio communication

SAFETY EQUIPMENT

- HASP
- organic vapor meter (OVM, FID, PID, etc.)
- fire extinguishers
- first aid kits
- absorbent material
- 6-mil plastic
- hazardous area tape
- air horn
- portable telephone

Health & Safety Plan
MDEQ LOE Site #50001136
Memphis Shell
80521 Main Street
Memphis, Michigan
October 31- November 2, 2022

14.0 SITE HEALTH and SAFETY PLAN ACKNOWLEDGEMENT FORM



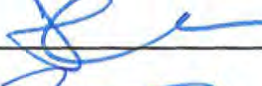

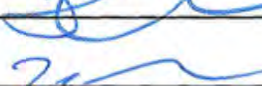
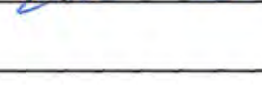
I have read and understand this HASP.

NAME (PRINT / SIGNATURE)

DATE

COMPANY

NAME

1. JUSTIN COLLINASH  10/31/22 ERG
2. Kaleb Schetter  10/31/22 IERG
3. JUSTIN COLLINASH  11/1/22 ERG
4. Kaleb Schetter  11/1/22 ERG
5. JUSTIN COLLINASH  11/2/22 ERG
6. Kaleb Schetter  11/2/22 ERG
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____



Department of Environment, Great Lakes, and Energy
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

WATER

Location ID

Program

CC Email 1

Project TAT Days

Sample Collector

50001171

Activity

laura.lambert@ergrp.net

STD

JUSTIN COLLINASH
Kaleb Schetter

Dept-Division-District

Funding Source

CC Email 2

Project Due Date

Sample Collector Phone

SE MI

Location Code

bob.zwald@ergrp.net

734-431-1332

State Project Manager

Overflow Lab Choice 1

CC Email 3

Accept Analysis hold time codes

Contract Firm

Rebecca DeGrazia

Overflow Lab Choice 2

Index 44701

Contract Firm Primary Contact

ERG

DeGraziaR@Michigan.gov

SUD Location Code

Fibertec Environmental Services

Primary Contact Phone

Laura Lambert

State Project Manager Phone

536-255-2935

Lab Use Only

Field Sample Identification

Collection Date

Collection Time

Bottle Count

Comments

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Bottle Count	Comments
1	MW-21	11/1/22	9:24	4	
2	MW-28		9:40		
3	MW-22		10:28		
4	MW-27		10:45		
5	MW-19		11:55		
6	de MW-12 MW-19 MS		11:55 11:56		
7	de MW-16 MW-19 MSD		11:55 12:50		
8	MW-12		11:56		
9	MW-16		12:50		
10	MW-9		13:01		

ORGANIC CHEMISTRY

MAD - DISSOLVED METALS

MA - TOTAL METALS

GENERAL CHEMISTRY

VOA - Volatile Organic Acids Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 METH - Methane, Ethane, Ethene Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10 ON - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10 Chlordane 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PINAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10 Acids only 1 2 3 4 5 6 7 8 9 10 Organic Specialty Request PFAS 1 2 3 4 5 6 7 8 9 10 Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO / ORO 1 2 3 4 5 6 7 8 9 10 METALS CHEMISTRY PACKAGES OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 OpMemo2 - Dissolved 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 Michigan10 - Dissolved 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Diss - Silver - Ag 1 2 3 4 5 6 7 8 9 10 Diss - Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Diss - Arsenic - As 1 2 3 4 5 6 7 8 9 10 Diss - Boron - B 1 2 3 4 5 6 7 8 9 10 Diss - Barium - Ba 1 2 3 4 5 6 7 8 9 10 Diss - Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Diss - Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Diss - Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Diss - Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Diss - Copper - Cu 1 2 3 4 5 6 7 8 9 10 Diss - Iron - Fe 1 2 3 4 5 6 7 8 9 10 Diss - Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Diss - Lithium - Li 1 2 3 4 5 6 7 8 9 10 Diss - Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Diss - Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Diss - Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Diss - Lead - Pb 1 2 3 4 5 6 7 8 9 10 Diss - Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Diss - Selenium - Se 1 2 3 4 5 6 7 8 9 10 Diss - Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Diss - Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Diss - Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Diss - Uranium - U 1 2 3 4 5 6 7 8 9 10 Diss - Vanadium - V 1 2 3 4 5 6 7 8 9 10 Diss - Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Diss - Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Diss - Potassium - K 1 2 3 4 5 6 7 8 9 10 Diss - Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Diss - Sodium - Na 1 2 3 4 5 6 7 8 9 10 Diss - Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 MD - Metals Dissolved Lab Filtration 1 2 3 4 5 6 7 8 9 10	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Boron - B 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Uranium - U 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10 Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 LHG - Low Level Mercury Mercury Low Level - Hg 1 2 3 4 5 6 7 8 9 10	GB Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 GCN Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 (Amenable / Weak Acid Dissociable) CA Chlorophyll 1 2 3 4 5 6 7 8 9 10 GN Ortho Phosphate - OP 1 2 3 4 5 6 7 8 9 10 GN Diss Ortho Phosphate - FF 1 2 3 4 5 6 7 8 9 10 GN Nitrite - NO₂ 1 2 3 4 5 6 7 8 9 10 GN Nitrate - NO₃ (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Suspended Solids - SS 1 2 3 4 5 6 7 8 9 10 GN Dissolved Solids - TDS 1 2 3 4 5 6 7 8 9 10 MN Diss Solids - TDS (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Turbidity 1 2 3 4 5 6 7 8 9 10 MN Total Alkalinity 1 2 3 4 5 6 7 8 9 10 MN Bicarb/Carb Alkalinity 1 2 3 4 5 6 7 8 9 10 (Includes Total Alkalinity) MN Chloride - Cl 1 2 3 4 5 6 7 8 9 10 MN Fluoride - F 1 2 3 4 5 6 7 8 9 10 MN Sulfate - SO₄ 1 2 3 4 5 6 7 8 9 10 MN Diss Chromium 6 - FF 1 2 3 4 5 6 7 8 9 10 MN Conductivity 1 2 3 4 5 6 7 8 9 10 MN pH 1 2 3 4 5 6 7 8 9 10 GA Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 GA Diss Org Carbon - DOC - FF 1 2 3 4 5 6 7 8 9 10 GN Diss Org Carbon - DOC (LF) 1 2 3 4 5 6 7 8 9 10 (Lab - Filtered & Preserved) GA Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 GA Ammonia - NH₃ 1 2 3 4 5 6 7 8 9 10 GA Nitrate+Nitrite - NO₃+NO₂ 1 2 3 4 5 6 7 8 9 10 GA Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 GA Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10 * (FF)-Field Filtered
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Relinquished by	Received By	Date / Time
Print Name & Org. Signature: Kaleb Schetter ERG		11/2/22
Print Name & Org. Signature: Kaleb Schetter		14:23
Print Name & Org. Signature:		
Print Name & Org. Signature:		

Analysis Request Request Sheet

Lab Work Order Number		Project Name Memphis Shell		Matrix WATER	
Location ID 50001171		Program CC Email 1		Project TAT Days	
Dept./Division/District SE MI		Activity laura.lambert@ergr.net		Project Due Date	
State Project Manager Rebecca DeGrazia		Funding Source Index 44701		Sample Collector Justin Counts	
State Project Manager Email DeGraziaR@michigan.gov		CC Email 2 bob.zwald@ergr.net		Sample Collector Phone 734-431-1332	
State Project Manager Phone 536-255-2935		CC Email 3		Contract Firm ERG	
Location Code		Overflow Lab Choice 1 Fibertec Environmental Services		Contract Firm Primary Contact Laura Lambert	
SUD Location Code		Overflow Lab Choice 2 Eurofins/TA		Primary Contact Phone 248-207-4583	
		Accept Analysis hold time codes			

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Bottle Count	Comments
1	MW-24	11/1/22	14:00	4	
2	MW-7	↓	14:18	1	
3	MW-3	11/2/22	9:10	1	
4	MW-13	↓	9:43	1	
5	MW-25	↓	10:20	1	
6	MW-20	↓	10:38	1	
7	MW-23	↓	11:05	↓	
8	TRIP BLANK			1	Lab Provided
9	EQUIPMENT BLANK	11/2/22	9:25	4	
10	DUP-1	11/2/22	—	4	

ORGANIC CHEMISTRY		MAD - DISSOLVED METALS		MA - TOTAL METALS		GENERAL CHEMISTRY	
VOA - Volatile Organic Acids	1 2 3 4 5 6 7 8 9 10	Diss - Silver - Ag	1 2 3 4 5 6 7 8 9 10	Silver - Ag	1 2 3 4 5 6 7 8 9 10	GN Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10	Diss - Aluminum - Al	1 2 3 4 5 6 7 8 9 10	Aluminum - Al	1 2 3 4 5 6 7 8 9 10	GN Available Cyanide - CN	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10	Diss - Arsenic - As	1 2 3 4 5 6 7 8 9 10	Arsenic - As	1 2 3 4 5 6 7 8 9 10	(Amenable / Weak Acid Dissociable)	
Chlorinated only	1 2 3 4 5 6 7 8 9 10	Diss - Boron - B	1 2 3 4 5 6 7 8 9 10	Boron - B	1 2 3 4 5 6 7 8 9 10	CA Chlorophyll	1 2 3 4 5 6 7 8 9 10
GRD	1 2 3 4 5 6 7 8 9 10	Diss - Barium - Ba	1 2 3 4 5 6 7 8 9 10	Barium - Ba	1 2 3 4 5 6 7 8 9 10	GN Ortho Phosphate - OP	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10	Diss - Beryllium - Be	1 2 3 4 5 6 7 8 9 10	Beryllium - Be	1 2 3 4 5 6 7 8 9 10	GN Diss Ortho Phosphate - *FF	1 2 3 4 5 6 7 8 9 10
METH - Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10	Diss - Cadmium - Cd	1 2 3 4 5 6 7 8 9 10	Cadmium - Cd	1 2 3 4 5 6 7 8 9 10	GN Nitrite - NO ₂	1 2 3 4 5 6 7 8 9 10
Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10	Diss - Cobalt - Co	1 2 3 4 5 6 7 8 9 10	Cobalt - Co	1 2 3 4 5 6 7 8 9 10	GN Nitrate - NO ₃ (Calc.)	1 2 3 4 5 6 7 8 9 10
ON - Pesticides, PCBs	1 2 3 4 5 6 7 8 9 10	Diss - Chromium - Cr	1 2 3 4 5 6 7 8 9 10	Chromium - Cr	1 2 3 4 5 6 7 8 9 10	GN Suspended Solids - SS	1 2 3 4 5 6 7 8 9 10
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10	Diss - Copper - Cu	1 2 3 4 5 6 7 8 9 10	Copper - Cu	1 2 3 4 5 6 7 8 9 10	GN Dissolved Solids - TDS	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10	Diss - Iron - Fe	1 2 3 4 5 6 7 8 9 10	Iron - Fe	1 2 3 4 5 6 7 8 9 10	MN Diss Solids - TDS (Calc.)	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10	Diss - Mercury - Hg	1 2 3 4 5 6 7 8 9 10	Mercury - Hg	1 2 3 4 5 6 7 8 9 10	GN Turbidity	1 2 3 4 5 6 7 8 9 10
Toxaphene	1 2 3 4 5 6 7 8 9 10	Diss - Lithium - Li	1 2 3 4 5 6 7 8 9 10	Lithium - Li	1 2 3 4 5 6 7 8 9 10	MN Total Alkalinity	1 2 3 4 5 6 7 8 9 10
Chlordane	1 2 3 4 5 6 7 8 9 10	Diss - Manganese - Mn	1 2 3 4 5 6 7 8 9 10	Manganese - Mn	1 2 3 4 5 6 7 8 9 10	MN Bicarb/Carb Alkalinity	1 2 3 4 5 6 7 8 9 10
BNA - Base Neutral Acids	1 2 3 4 5 6 7 8 9 10	Diss - Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10	Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10	(Includes Total Alkalinity)	
BNAs only	1 2 3 4 5 6 7 8 9 10	Diss - Nickel - Ni	1 2 3 4 5 6 7 8 9 10	Nickel - Ni	1 2 3 4 5 6 7 8 9 10	MN Chloride - Cl	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10	Diss - Lead - Pb	1 2 3 4 5 6 7 8 9 10	Lead - Pb	1 2 3 4 5 6 7 8 9 10	MN Fluoride - F	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10	Diss - Antimony - Sb	1 2 3 4 5 6 7 8 9 10	Antimony - Sb	1 2 3 4 5 6 7 8 9 10	MN Sulfate - SO ₄	1 2 3 4 5 6 7 8 9 10
Acids only	1 2 3 4 5 6 7 8 9 10	Diss - Selenium - Se	1 2 3 4 5 6 7 8 9 10	Selenium - Se	1 2 3 4 5 6 7 8 9 10	MN Diss Chromium 6 - *FF	1 2 3 4 5 6 7 8 9 10
Organic Specialty Request		Diss - Strontium - Sr	1 2 3 4 5 6 7 8 9 10	Strontium - Sr	1 2 3 4 5 6 7 8 9 10	MN Conductivity	1 2 3 4 5 6 7 8 9 10
PFAS	1 2 3 4 5 6 7 8 9 10	Diss - Titanium - Ti	1 2 3 4 5 6 7 8 9 10	Titanium - Ti	1 2 3 4 5 6 7 8 9 10	MN pH	1 2 3 4 5 6 7 8 9 10
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10	Diss - Thallium - Tl	1 2 3 4 5 6 7 8 9 10	Thallium - Tl	1 2 3 4 5 6 7 8 9 10	GA Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10	Diss - Uranium - U	1 2 3 4 5 6 7 8 9 10	Uranium - U	1 2 3 4 5 6 7 8 9 10	GA Diss Org Carbon - DOC *FF	1 2 3 4 5 6 7 8 9 10
Finger Print	1 2 3 4 5 6 7 8 9 10	Diss - Vanadium - V	1 2 3 4 5 6 7 8 9 10	Vanadium - V	1 2 3 4 5 6 7 8 9 10	GN Diss Org Carbon - DOC (LF)	1 2 3 4 5 6 7 8 9 10
DRO / ORO	1 2 3 4 5 6 7 8 9 10	Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10	Zinc - Zn	1 2 3 4 5 6 7 8 9 10	(Lab - Filtered & Preserved)	
METALS CHEMISTRY PACKAGES		Diss - Calcium - Ca	1 2 3 4 5 6 7 8 9 10	Calcium - Ca	1 2 3 4 5 6 7 8 9 10	GA Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Total	1 2 3 4 5 6 7 8 9 10	Diss - Potassium - K	1 2 3 4 5 6 7 8 9 10	Potassium - K	1 2 3 4 5 6 7 8 9 10	GA Ammonia - NH ₃	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Dissolved	1 2 3 4 5 6 7 8 9 10	Diss - Magnesium - Mg	1 2 3 4 5 6 7 8 9 10	Magnesium - Mg	1 2 3 4 5 6 7 8 9 10	GA Nitrate+Nitrite - NO ₃ +NO ₂	1 2 3 4 5 6 7 8 9 10
(Sb,As,Ba,Bi,Cd,Cr,Cu,Co,Fe,Pb,Mn,Mo,Ni,Se,Ag,Tl,V,Zn)		Diss - Sodium - Na	1 2 3 4 5 6 7 8 9 10	Sodium - Na	1 2 3 4 5 6 7 8 9 10	GA Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10	Diss - Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10	Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10	GA Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10
Michigan10 - Dissolved	1 2 3 4 5 6 7 8 9 10	MAD - Metals Dissolved		LHG - Low Level Mercury			
(As,Ba,Cd,Cr,Cu,Pb,He,Se,Ag,Zn)		Lab Filtration	1 2 3 4 5 6 7 8 9 10	Mercury Low Level - Hg	1 2 3 4 5 6 7 8 9 10		

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Kaleb Schetter ERG		
	Signature: <i>Kaleb Schetter</i>		
	Print Name & Org.		
	Signature:		
	Print Name & Org.		
	Signature:		

Analysis Request Sheet

SAFETY INFORMATION

(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

Are samples expected to contain cyanide (CN).....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples expected to be flammable.....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples acidic prior to preservation (pH < 2).....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples caustic prior to preservation (pH > 12).....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples expected to be Biohazardous.....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples expected to be reactive with water or acid.....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples expected to be radioactive.....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples expected to contain dioxin.....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Are samples expected to be explosive.....	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Were samples pre-preserved.....	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

List additional suspected sample hazard information below

MDEQ PRESERVATIVE TRACKING NUMBERS

VOA - HCL	<input type="text" value="1771"/>	CA - MgCO3	<input type="text"/>
VOA - MeOH	<input type="text"/>	MA/MAD - HNO3	<input type="text"/>
GA - H2SO4	<input type="text"/>	GCN - NaOH	<input type="text"/>
GB - NaOH	<input type="text"/>	GCN - PbCO3	<input type="text"/>

Low-Flow Test Report:

Test Date / Time: 11/1/2022 9:01:48 AM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-28 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 40.2 ft Total Depth: 45.2 ft Initial Depth to Water: 43.55 ft	Pump Type: Submersible Pump Intake From TOC: 44.5 ft Estimated Total Volume Pumped: 1 gal Flow Cell Volume: 130 ml Final Flow Rate: 125 ml/min Final Draw Down: 0.03 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/1/2022 9:01 AM	00:00	6.64 pH	13.04 °C	2.15 mS/cm	0.51 mg/L	197.12 NTU	1.8 mV	43.55 ft	125.00 ml/min
11/1/2022 9:04 AM	03:00	6.69 pH	13.11 °C	2.12 mS/cm	0.28 mg/L	251.65 NTU	-23.9 mV	43.58 ft	125.00 ml/min
11/1/2022 9:07 AM	06:00	6.71 pH	13.54 °C	2.11 mS/cm	0.27 mg/L	387.02 NTU	-34.8 mV	43.58 ft	125.00 ml/min
11/1/2022 9:10 AM	09:00	6.72 pH	14.45 °C	2.10 mS/cm	0.25 mg/L	237.66 NTU	-40.1 mV	43.58 ft	125.00 ml/min
11/1/2022 9:13 AM	12:00	6.74 pH	14.93 °C	2.09 mS/cm	0.25 mg/L	158.20 NTU	-42.9 mV	43.58 ft	125.00 ml/min
11/1/2022 9:16 AM	15:00	6.75 pH	14.98 °C	2.08 mS/cm	0.22 mg/L	105.26 NTU	-45.2 mV	43.58 ft	125.00 ml/min
11/1/2022 9:19 AM	18:00	6.75 pH	15.85 °C	2.07 mS/cm	0.23 mg/L	69.39 NTU	-46.7 mV	43.58 ft	125.00 ml/min
11/1/2022 9:22 AM	21:00	6.76 pH	15.71 °C	2.06 mS/cm	0.35 mg/L	30.72 NTU	-46.7 mV	43.58 ft	125.00 ml/min
11/1/2022 9:25 AM	24:00	6.77 pH	15.18 °C	2.04 mS/cm	0.38 mg/L	34.13 NTU	-46.0 mV	43.58 ft	125.00 ml/min
11/1/2022 9:28 AM	27:00	6.77 pH	14.65 °C	2.02 mS/cm	0.34 mg/L	38.63 NTU	-45.7 mV	43.58 ft	125.00 ml/min
11/1/2022 9:31 AM	30:00	6.77 pH	14.65 °C	2.02 mS/cm	0.37 mg/L	43.16 NTU	-45.3 mV	43.58 ft	125.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 11/1/2022 10:05:54 AM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-27 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 43.6 ft Total Depth: 48.6 ft Initial Depth to Water: 45.02 ft	Pump Type: Submersible Pump Intake From TOC: 46 ft Estimated Total Volume Pumped: 2 gal Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/1/2022 10:05 AM	00:00	6.90 pH	12.17 °C	2.01 mS/cm	0.68 mg/L	1,488.6 NTU	-10.9 mV	45.02 ft	300.00 ml/min
11/1/2022 10:08 AM	03:00	6.89 pH	13.35 °C	2.01 mS/cm	0.43 mg/L	613.59 NTU	-33.6 mV	45.06 ft	300.00 ml/min
11/1/2022 10:11 AM	06:00	6.91 pH	14.13 °C	2.01 mS/cm	0.38 mg/L	215.23 NTU	-42.8 mV	45.06 ft	300.00 ml/min
11/1/2022 10:14 AM	09:00	6.93 pH	14.58 °C	1.99 mS/cm	0.34 mg/L	104.80 NTU	-48.4 mV	45.06 ft	300.00 ml/min
11/1/2022 10:17 AM	12:00	6.94 pH	14.79 °C	1.98 mS/cm	0.31 mg/L	60.19 NTU	-52.2 mV	45.06 ft	300.00 ml/min
11/1/2022 10:20 AM	15:00	6.95 pH	14.88 °C	1.97 mS/cm	0.31 mg/L	39.46 NTU	-54.7 mV	45.06 ft	300.00 ml/min
11/1/2022 10:23 AM	18:00	6.95 pH	14.83 °C	1.96 mS/cm	0.33 mg/L	28.14 NTU	-56.3 mV	45.06 ft	300.00 ml/min
11/1/2022 10:26 AM	21:00	6.95 pH	14.97 °C	1.96 mS/cm	0.35 mg/L	28.62 NTU	-57.3 mV	45.06 ft	300.00 ml/min
11/1/2022 10:29 AM	24:00	6.95 pH	15.35 °C	1.96 mS/cm	0.36 mg/L	24.87 NTU	-58.5 mV	45.06 ft	300.00 ml/min
11/1/2022 10:32 AM	27:00	6.95 pH	15.70 °C	1.95 mS/cm	0.35 mg/L	26.62 NTU	-59.8 mV	45.06 ft	300.00 ml/min
11/1/2022 10:35 AM	30:00	6.95 pH	15.89 °C	1.95 mS/cm	0.35 mg/L	25.08 NTU	-60.8 mV	45.06 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW-27	@10:45

Low-Flow Test Report:

Test Date / Time: 11/1/2022 11:30:17 AM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 44.77 ft Total Depth: 49.77 ft Initial Depth to Water: 45.73 ft	Pump Type: Submersible Pump Intake From TOC: 47.5 ft Estimated Total Volume Pumped: 2 gal Flow Cell Volume: 130 ml Final Flow Rate: 320 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/1/2022 11:30 AM	00:00	6.58 pH	13.98 °C	1.97 mS/cm	0.70 mg/L	142.52 NTU	77.1 mV	45.73 ft	320.00 ml/min
11/1/2022 11:33 AM	03:00	6.44 pH	14.81 °C	1.86 mS/cm	0.71 mg/L	54.45 NTU	73.4 mV	45.73 ft	320.00 ml/min
11/1/2022 11:36 AM	06:00	6.44 pH	15.31 °C	1.84 mS/cm	0.76 mg/L	18.35 NTU	76.3 mV	45.73 ft	320.00 ml/min
11/1/2022 11:39 AM	09:00	6.47 pH	15.52 °C	1.86 mS/cm	0.77 mg/L	10.63 NTU	78.8 mV	45.73 ft	320.00 ml/min
11/1/2022 11:42 AM	12:00	6.50 pH	15.59 °C	1.86 mS/cm	0.77 mg/L	6.19 NTU	80.7 mV	45.73 ft	320.00 ml/min
11/1/2022 11:45 AM	15:00	6.52 pH	15.63 °C	1.87 mS/cm	0.76 mg/L	8.56 NTU	82.3 mV	45.73 ft	320.00 ml/min

Samples

Sample ID:	Description:
MW-19	@ 11:55
MS/MSD samples collected	

Low-Flow Test Report:

Test Date / Time: 11/1/2022 12:24:35 PM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 43.13 ft Total Depth: 48.13 ft Initial Depth to Water: 45.21 ft	Pump Type: Submersible Pump Intake From TOC: 46.5 ft Estimated Total Volume Pumped: 2.5 gal Flow Cell Volume: 130 ml Final Flow Rate: 290 ml/min Final Draw Down: 0.08 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/1/2022 12:24 PM	00:00	6.56 pH	14.82 °C	1.91 mS/cm	0.36 mg/L	178.77 NTU	-12.3 mV	45.21 ft	290.00 ml/min
11/1/2022 12:27 PM	03:00	6.61 pH	15.83 °C	1.91 mS/cm	0.34 mg/L	92.33 NTU	-23.0 mV	45.28 ft	290.00 ml/min
11/1/2022 12:30 PM	06:00	6.67 pH	15.40 °C	1.89 mS/cm	0.22 mg/L	83.25 NTU	-30.5 mV	45.29 ft	290.00 ml/min
11/1/2022 12:33 PM	09:00	6.68 pH	15.44 °C	1.89 mS/cm	0.22 mg/L	45.29 NTU	-33.7 mV	45.29 ft	290.00 ml/min
11/1/2022 12:36 PM	12:00	6.70 pH	15.84 °C	1.89 mS/cm	0.25 mg/L	21.66 NTU	-36.6 mV	45.29 ft	290.00 ml/min
11/1/2022 12:39 PM	15:00	6.71 pH	16.16 °C	1.89 mS/cm	0.24 mg/L	10.52 NTU	-39.2 mV	45.29 ft	290.00 ml/min
11/1/2022 12:42 PM	18:00	6.72 pH	16.18 °C	1.89 mS/cm	0.23 mg/L	11.42 NTU	-41.0 mV	45.29 ft	290.00 ml/min
11/1/2022 12:45 PM	21:00	6.73 pH	16.20 °C	1.88 mS/cm	0.22 mg/L	15.17 NTU	-42.5 mV	45.29 ft	290.00 ml/min

Samples

Sample ID:	Description:
MW-16	@ 12:50

Low-Flow Test Report:

Test Date / Time: 11/1/2022 1:28:17 PM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-24 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 41.85 ft Total Depth: 46.85 ft Initial Depth to Water: 44.2 ft	Pump Type: Submersible Pump Intake From TOC: 46 ft Estimated Total Volume Pumped: 2.5 gal Flow Cell Volume: 130 ml Final Flow Rate: 280 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/1/2022 1:28 PM	00:00	6.56 pH	14.62 °C	2.36 mS/cm	0.30 mg/L	96.80 NTU	-13.0 mV	44.20 ft	280.00 ml/min
11/1/2022 1:31 PM	03:00	6.53 pH	15.33 °C	2.39 mS/cm	0.35 mg/L	40.68 NTU	-17.9 mV	44.22 ft	280.00 ml/min
11/1/2022 1:34 PM	06:00	6.54 pH	15.77 °C	2.40 mS/cm	0.39 mg/L	51.09 NTU	-21.5 mV	44.22 ft	280.00 ml/min
11/1/2022 1:37 PM	09:00	6.55 pH	16.78 °C	2.43 mS/cm	0.29 mg/L	48.72 NTU	-25.1 mV	44.22 ft	280.00 ml/min
11/1/2022 1:40 PM	12:00	6.58 pH	15.57 °C	2.43 mS/cm	0.24 mg/L	49.67 NTU	-27.6 mV	44.22 ft	280.00 ml/min
11/1/2022 1:43 PM	15:00	6.57 pH	15.61 °C	2.44 mS/cm	0.23 mg/L	55.55 NTU	-28.2 mV	44.22 ft	280.00 ml/min
11/1/2022 1:46 PM	18:00	6.58 pH	15.73 °C	2.45 mS/cm	0.21 mg/L	65.37 NTU	-29.6 mV	44.22 ft	280.00 ml/min
11/1/2022 1:49 PM	21:00	6.59 pH	15.82 °C	2.45 mS/cm	0.20 mg/L	66.15 NTU	-30.9 mV	44.22 ft	280.00 ml/min
11/1/2022 1:52 PM	24:00	6.60 pH	15.79 °C	2.45 mS/cm	0.19 mg/L	73.66 NTU	-32.1 mV	44.22 ft	280.00 ml/min

Samples

Sample ID:	Description:
MW-24	@14:00

Low-Flow Test Report:

Test Date / Time: 11/2/2022 9:58:32 AM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-25 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 44.33 ft Total Depth: 49.33 ft Initial Depth to Water: 46.46 ft	Pump Type: Submersible Pump Intake From TOC: 48.5 ft Estimated Total Volume Pumped: 2 gal Flow Cell Volume: 130 ml Final Flow Rate: 350 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/2/2022 9:58 AM	00:00	6.78 pH	12.38 °C	4.11 mS/cm	3.58 mg/L	141.85 NTU	-50.1 mV	46.46 ft	350.00 ml/min
11/2/2022 10:01 AM	03:00	6.81 pH	12.89 °C	4.01 mS/cm	1.88 mg/L	67.52 NTU	-61.8 mV	46.50 ft	350.00 ml/min
11/2/2022 10:04 AM	06:00	6.80 pH	13.30 °C	3.96 mS/cm	0.92 mg/L	27.64 NTU	-65.1 mV	46.50 ft	350.00 ml/min
11/2/2022 10:07 AM	09:00	6.80 pH	13.62 °C	3.93 mS/cm	0.64 mg/L	17.08 NTU	-66.4 mV	46.50 ft	350.00 ml/min
11/2/2022 10:10 AM	12:00	6.79 pH	13.78 °C	3.90 mS/cm	0.52 mg/L	11.06 NTU	-67.0 mV	46.50 ft	350.00 ml/min
11/2/2022 10:13 AM	15:00	6.79 pH	13.84 °C	3.87 mS/cm	0.43 mg/L	7.89 NTU	-67.0 mV	46.50 ft	350.00 ml/min

Samples

Sample ID:	Description:
MW-25	@ 10:20
DUP-1	

Low-Flow Test Report:

Test Date / Time: 11/2/2022 10:46:19 AM
Project: Memphis Shell
Operator Name: JEC

Location Name: Memphis MW-23 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 43.22 ft Total Depth: 48.22 ft Initial Depth to Water: 44.2 ft	Pump Type: Submersible Pump Intake From TOC: 46.5 ft Estimated Total Volume Pumped: 2 gal Flow Cell Volume: 130 ml Final Flow Rate: 400 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Serial Number: 920479
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/2/2022 10:46 AM	00:00	6.71 pH	13.42 °C	2.27 mS/cm	0.39 mg/L	116.20 NTU	-40.5 mV	44.20 ft	400.00 ml/min
11/2/2022 10:49 AM	03:00	6.74 pH	13.94 °C	2.18 mS/cm	0.31 mg/L	42.23 NTU	-53.1 mV	44.20 ft	400.00 ml/min
11/2/2022 10:52 AM	06:00	6.76 pH	14.15 °C	2.14 mS/cm	0.27 mg/L	13.13 NTU	-60.2 mV	44.20 ft	400.00 ml/min
11/2/2022 10:55 AM	09:00	6.78 pH	14.25 °C	2.12 mS/cm	0.24 mg/L	8.07 NTU	-64.7 mV	44.20 ft	400.00 ml/min
11/2/2022 10:58 AM	12:00	6.79 pH	14.33 °C	2.10 mS/cm	0.22 mg/L	4.43 NTU	-67.6 mV	44.20 ft	400.00 ml/min

Samples

Sample ID:	Description:
MW-23	@ 11:05

ATTACHMENT 3

CERTIFICATE OF MICHIGAN BASED BUSINESS AND CERTIFICATE OF RESPONSIBILITY





DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Certification of a Michigan Based Business

(Information Required Prior to Contract Award for Application
of State Preference/Reciprocity Provisions)

To qualify as a Michigan business:

Vendor must have, during the 12 months immediately preceding this bid deadline:
or

If the business is newly established, for the period the business has been in existence, it has:

(Check all that apply):

- ☒ Filed a Michigan single business tax return showing a portion, or all the income tax base allocated or apportioned to the State of Michigan pursuant to the Michigan Single Business Tax Act, 1975 PA 228, MCL • 208.1 – 208.145; or
- ☒ Filed a Michigan income tax return showing income generated in or attributed to the State of Michigan; or
- ☐ Withheld Michigan income tax from compensation paid to the bidder's owners and remitted the tax to the Department of Treasury; or

I certify that I **have personal knowledge** of such filing or withholding, that it was more than a nominal filing for the purpose of gaining the status of a Michigan business, and that it indicates a significant business presence in the state, considering the size of the business and the nature of its activities.

I authorize the Michigan Department of Treasury to verify that the business has or has not met the criteria for a Michigan business indicated above and to disclose the verifying information to the procuring agency.

Bidder shall also indicate one of the following:

- ☒ Bidder qualifies as a Michigan business (provide zip code: 48393)
- ☐ Bidder does not qualify as a Michigan business (provide name of State: _____).
- ☐ Principal place of business is outside the State of Michigan, however service/commodity provided by a location within the State of Michigan (provide zip code: _____)

R 08/20



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Bidder: Environmental Resources Group, LLC

Robert T. Reichenbach

Authorized Agent Name (print or type)

Robert T. Reichenbach 01/10/2023

Authorized Agent Signature & Date

Fraudulent Certification as a Michigan business is prohibited by MCL 18.1268 § 268. A BUSINESS THAT PURPOSELY OR WILLFULLY SUBMITS A FALSE CERTIFICATION THAT IT IS A MICHIGAN BUSINESS OR FALSELY INDICATES THE STATE IN WHICH IT HAS ITS PRINCIPAL PLACE OF BUSINESS IS GUILTY OF A FELONY, PUNISHABLE BY A FINE OF NOT LESS THAN \$25,000 and subject to debarment under MCL 18.264.



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

Responsibility Certification

The bidder certifies to the best of its knowledge and belief that, within the past three (3) years, the bidder, an officer of the bidder, or an owner of a 25% or greater interest in the bidder:

- (a) Has not been convicted of a criminal offense incident to the application for or performance of a contract or subcontract with the State of Michigan or any of its agencies, authorities, boards, commissions, or departments.
- (b) Has not had a felony conviction in any state (including the State of Michigan).
- (c) Has not been convicted of a criminal offense which negatively reflects on the bidder's business integrity, including but not limited to, embezzlement, theft, forgery, bribery, falsification, or destruction of records, receiving stolen property, negligent misrepresentation, price-fixing, bid rigging, or a violation of state or federal anti-trust statutes.
- (d) Has not had a loss or suspension of a license or the right to do business or practice a profession, the loss or suspension of which indicates dishonesty, a lack of integrity, or a failure or refusal to perform in accordance with the ethical standards of the business or profession in question.
- (e) Has not been terminated for cause by the Owner.
- (f) Has not failed to pay any federal, state, or local taxes.
- (g) Has not failed to comply with all requirements for foreign corporations.
- (h) Has not been debarred from participation in the bid process pursuant to Section 264 of 1984 PA 431, as amended, MCL 18.1264, or debarred or suspended from consideration for award of contracts by any other State or any federal Agency.
- (i) Has not been convicted of a criminal offense or other violation of other state or federal law, as determined by a court of competent jurisdiction or an administrative proceeding, which in the opinion of DTMB indicates that the bidder is unable to perform responsibly or which reflects a lack of integrity that could negatively impact or reflect upon the State of Michigan, including but not limited to, any of the following offenses under or violations of:
 - i. The Natural Resources and Environmental Protection Act, 1994 PA 451, MCL 324.101 to 324.90106.
 - ii. A persistent and knowing violation of the Michigan Consumer Protection Act, 1976 PA 331, MCL 445.901 to 445.922.



DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
State Facilities Administration
Design & Construction Division

- iii. 1965 PA 166, MCL 408.551 to 408.558 (law relating to prevailing wages on state projects) and a finding that the bidder failed to pay the wages and/or fringe benefits due within the period required.
 - iv. Repeated or flagrant violations of 1978 PA 390 MCL 408.471 to 408.490 (law relating to payment of wages and fringe benefits).
 - v. A willful or persistent violation of the Michigan Occupational Health and Safety Act, 1974, PA 154, MCL 408.10001 to 408.1094, including: a criminal conviction, repeated willful violations that are final orders, repeated violations that are final orders, and failure to abate notices that are final orders.
 - vi. A violation of federal or state civil rights, equal rights, or non-discrimination laws, rules, or regulations.
 - vii. Been found in contempt of court by a Federal Court of Appeals for failure to correct an unfair labor practice as prohibited by Section 8 of Chapter 372 of the National Labor Relations Act, 29 U. S. C. 158 (1980 PA 278, as amended, MCL 423.321 et seq).
- (j) Is NOT an Iran linked business as defined in MCL 129.312.

I understand that a false statement, misrepresentation, or concealment of material facts on this certification may be grounds for rejection of this proposal or termination of the award and may be grounds for debarment.

Bidder: Environmental Resources Group, LLC

Robert T. Reichenbach

Authorized Agent Name (print or type)

Robert T. Reichenbach 01/10/2023

Authorized Agent Signature & Date

☐ I am unable to certify to the above statements. My explanation is attached.

ATTACHMENT 4

QUESTIONNAIRE





**Department of Technology, Management and Budget
2023 Indefinite-Scope Indefinite-Delivery – Request for Qualifications
Professional Environmental Consulting Services Questionnaire
Various Locations, Michigan**

INSTRUCTIONS: Firms shall complete the following information in the form provided. A separate sheet may be used if additional space is needed; please key the continuation paragraphs to the questionnaire. Answer questions completely and concisely to streamline the review process. If you provide information in this questionnaire that is relevant to any other parts of the proposal, please reference the article numbers to avoid repetition.

ARTICLE 1: BUSINESS ORGANIZATION

1. Full Name: Environmental Resources Group, LLC

Address: 28003 Center Oaks Ct., Ste. 106, Wixom, MI 48393

Telephone and Fax: 248-773-7986 (office), 248-924-3108 (fax)

Website: www.ergp.net E-Mail: bob.reichenbach@ergp.net

SIGMA Vendor ID: CV0052614

If applicable, state the branch office(s), partnering organization or other subordinate element(s) that will perform, or assist in performing, the work:

Additional ERG Offices: 75 West Walton, Suite C, Muskegon, Michigan 49440
3125 Sovereign Drive, Suite B, Lansing, Michigan 48911
17800 Woodward Avenue, Suite 100C, Detroit, Michigan 48203

If awarded a contract and / or subsequent assignment(s), state the specific SIGMA business address which you would like associated for all communication (Contracts, Contract Order, Contract Modifications and Payments)? Legal address: 28003 Center Oaks Ct., Ste. 106, Wixom, MI 48393

Please list all person(s) authorized to receive and sign a resulting contract and / or subsequent assignment(s). Please include persons name, title, address, email and phone number. Robert T. Reichenbach, President, 28003 Center Oaks Ct., Ste. 106, Wixom, MI 48393, bob.reichenbach@ergp.net, 248-773-7986

2. Check the appropriate status:

☐ Individual firm ☐ Association ☐ Partnership ☒ Corporation, or ☐ Combination –

Explain: Limited Liability Corporation

If you operate as a corporation, include the state in which you are incorporated and the date of incorporation: State of Michigan, 2009

Include a brief history of the Professional's firm: Environmental Resources Group, LLC (ERG) was founded in 2009 by professionals that had been in the environmental field for over 36 years, managing a myriad of remediation, due diligence, and compliance projects at large and mid-size consulting firms. The partners had a vision that a lean company with quality people and a high level of experience and expertise would be the necessary dynamic for the new economy. In 2013, ERG opened its Muskegon Office, to service our clients on the west side of the state and in northern Michigan. In 2015 ERG acquired Quality Systems Group (QSG). This addition strongly enhanced ERG's Facility Compliance Auditing and Permitting Services. In early 2016 ERG acquired Germane Environmental Consulting (GEC). GEC was well versed in several areas with special focus in supporting the agricultural industry in meeting their environmental objectives. In 2021 ERG acquired Fibertec Industrial Hygiene Division. This acquisition bolstered ERG's lead, asbestos, mold and biohazard capabilities and established our office in Lansing.

3. Provide an organization chart depicting key personnel and their roles for a typical assigned project. Include generic supporting staff positions.

Included in Part I – Technical Proposal, and Attachment 1 of the Technical Proposal

4. Has there been a recent change in organizational structure (e.g., management team) or control (e.g. merger or acquisition) of your company? If the answer is yes: (a) explain why the change occurred and (b) how this change affected your company. No changes.
5. Provide a four year rate schedule per position.

Included in Part II – Cost Proposal

ARTICLE 2: PROJECT TYPES AND SERVICES OFFERED

Identify the project types and professional services for which your firm is exceptionally qualified and experienced. Contractor should have the capability to form potential teams with adequate experience in environmental investigation and remediation services. Provide attachments illustrating a minimum of three examples, with references, of successful projects performed in the last five years for each item checked. Identification of specialties will assist the State project directors/managers in matching firms with projects.

☒ Asbestos / Lead / Mold / Biohazard / Free Product / Regulated Waste Survey /

Abatement (*Refer to Project Examples 1, 3, 8, 10, and 12*)

☒ Brownfield Development (*Refer to Project Examples 8, 9, and 10*)

☐ Ecological Risk Assessment / Forestry and Land Management / Wetland

Mitigation / Streams and Lakes Restoration

☒ Environmental Investigation / Characterization / Pilot Tests / Feasibility Study

(*Refer to Project Examples 3, 4, 5, and 13*)

- ☒ Environmental/ Roto Sonic Drilling / Well Abandonment (*Refer to Project Examples 4, 9, and 13*)
- ☒ Ground Penetrating Radar (GPR) / Laser-Induced Fluorescence (LIF) Field - Screening (*Refer to Project Examples 1, 4, 11, and 14*)
- ☒ Landfill Maintenance / Monitoring (*Refer to Project Examples 2, 6, and 7*)
- ☐ Nuclear Waste Management / Disposal / Remediation
- ☒ Per-& Polyfluoroalkyl Substances (PFAS) Sampling / Mitigation / Remediation (*Refer to Project Examples 2, 7, 9, and 15*)
- ☒ Phase I / Phase II / Baseline Environmental Assessments (*Refer to Project Examples 1, 5, 8, and 10*)
- ☒ Remediation Systems Design / Construction Oversight / O&M / Decommissioning (*Refer to Project Examples 2, 5, 6, and 13*)
- ☐ Specialty Sub-Surface / Utility Inspection / Sewer Camera / Cleaning
- ☒ Underground / Aboveground Storage Tank (UST/AST) Removal / Demolition / Soil Excavation / Closure (*Refer to Project Examples 1, 11, and 14*)
- ☒ Vapor Intrusion Assessments / Risk Mitigation / Design / Installation / O&M Services (*Refer to Project Examples 5, 6, 10, and 13*)

ARTICLE 3: PROJECT LOCATION

Identify the regions where your firm can most efficiently provide services. Assignments may vary from the regions checked, depending on the specialties and services required.

- ☒ Western Upper Peninsula (west of Marquette)
- ☒ Eastern Upper Peninsula (east of Marquette)
- ☒ Northern Lower Peninsula (north of Grayling)
- ☒ Saginaw Bay area (east of 127, north of I-69 and M 57, south of Grayling)
- ☒ Western Lower Peninsula (west of 127, north of Muskegon, south of Grayling)
- ☒ Central Lower Peninsula (east of Battle Creek, west of Chelsea, south of M 46 and M 57)
- ☒ Southwestern Lower Peninsula (west of Battle Creek, south of Muskegon)
- ☒ Southeastern Lower Peninsula (east of Chelsea, south of I-69)

ARTICLE 4: CONTRACT UNDERSTANDING

The following items should be addressed on the assumption that your firm is awarded an Indefinite-Scope, Indefinite-Delivery contract. (See attached sample contract).

- 4.1 Is it understood that your firm is required to respond to small projects (less than \$25,000) as well as larger projects?

Yes ☒ No ☐

- 4.2 Is it understood that there is no guarantee of any work under this contract?

Yes ☒ No ☐

- 4.3 Is it understood that your firm will be required to execute the attached standard State of Michigan contract language for professional services?

Yes ☒ No ☐

- 4.4 Is it clearly understood that professional liability insurance is required at the time of execution of the ISID contract? (See Article 5 of the attached Sample Contract.)

Yes ☒ No ☐

- 4.5 Is it understood that your firm must comply with State of Michigan law as it applies to your services?

Yes ☒ No ☐

4.6 Does your firm have prior experience working with the State of Michigan?

Yes ☒ No ☐

If yes, explain: ERG has successfully completed several ISID Contracts that include the 2013 Environmental Expanded Triage Services (Contract No. 00415), the 2015 Environmental ISID Services (Contract No. 00527), the 2017 ISID Design Build Services for Soil and Tank Removal (Contract No. 00687), and the 2019 Environmental ISID Services (Contract No. 00756). ERG currently has ISID Contracts that include the 2022 ISID Design Build Services for Tank and Soil Services (Contract No. 00913), and the 2022 Expanded Triage (Contract No. 00905). Under these current contracts, ERG has completed numerous project assignments successfully for several EGLE districts. Project examples are included in Article 8 of this questionnaire.

ARTICLE 5: CAPACITY AND QUALITY

5.1 Briefly describe your firm's methods and procedures for quality control for your deliverables and services.

ERG will apply its technical QA/QC procedures based on the environmental industry standards to ensure quality performance, reproducible results, and confidence in the reliability and accuracy of prepared documents. To achieve this commitment to quality, ERG has implemented a Quality Management System (QMS) that guides the activities of the project staff. Our system is monitored internally to ensure that our staff and managers are following our QMS. The ERG QMS has two basic purposes; first to develop processes so that the required goods or services are produced efficiently, effectively and at a high level of quality; and second, to have processes in place to find and repair any errors that occur to prevent delivery of unacceptable work to the client. Our QMS system is implemented with the four management processes briefly summarized as the following: Quality Planning: determining relevant quality standards and how to satisfy them.

Quality Assurance: continual evaluation of project performance relative to the identified standards.

Quality Control: technical monitoring of project tasks and results.

Quality Improvement: effort to increase the company's ability to fulfill quality requirements.

The ERG QMS is documented in the ERG Procedures Manual. The ERG QMS will be used as the QA/QC basis in performing the scope of work for the assigned projects.

These procedures will be followed and adhered to by ERG project staff. Data gathering by ERG staff, through field measurement and observations during site reconnaissance and investigative activities, requires strict adherence to quality control procedures, detailed in the preparation of the work assignment's Project Plan, Work Plan, Quality Assurance Project Plan and site Sampling and Analysis Plan. Much of this information is contained in Standard Operational Procedures for environmental field investigations and based on EGLE memoranda, USEPA guidance, ASTM standards and other industry standards as appropriate.

- 5.2 Has your firm been involved in claims or suits associated with professional services errors and / or omissions?

Yes ☐ No ☒

If yes, explain: [Click or tap here to enter text.](#)

- 5.3 Will there be a key person who is assigned to a project for its duration?

Yes ☒ No ☐

- 5.4 Please present your understanding of the relationship between your firm, the DTMB Design and Construction Division, and the State Agency for whom a project will be completed.

DTMB contracts with ERG to provide a project or task specific proposal to evaluation, design-build, and implementation. The projects involve sites or activities regulated under NREPA 451, Parts 201 and 213, CERCLA, and other relevant state and federal statutes.

- 5.5** Describe your approach if a bidder proposes a substitution of a specified material during bidding.

Requests for substitution of a material specified, proposals for any modifications to the specifications, requests for information and all other questions or inquiries about the bid documents and/or the scope of work will be required to be submitted in writing to ERG and the contracting agency. Generally, requests or inquiries received less than seven calendar days before the date of bid opening will be answered only if

(a) the response can be given through addenda made available at least 72-hours before bid opening,

(b) the bid opening is postponed by addendum, or

(c) the work is re-bid without re-advertising following the issuance of post-bid addenda.

ERG may consider any addition, limitation or provision made with or attached to a bid non-responsive and/or irregular and be a cause for rejection. We would reserve the right to issue post-bid addenda after opening bids and set a new date for the receipt and opening of sealed bids.

- 5.6 Describe your approach if a contractor proposes a substitution of a specified material or detail with shop drawing submittals or in construction.

ERG will review proposed substitutions for consideration. If proposed changes of a specified material or detail don't compromise the integrity of the planned construction and offer overall cost savings, ERG would certainly consider the substitution. Without positive justification, ERG would likely reject the substitution.

- 5.7 How will your firm provide consistent and continuous communication pertaining to project activities and project status to the State of Michigan during the progress of projects?

In addition to frequent telephone calls, e-mail updates, and on-site status meetings with the agency Project Manager, the following deliverables and project status updates/reports are generally submitted on similar projects:

Progress Reports – Progress reports are submitted at a frequency required by the contracting agency. These can be prepared weekly, monthly, quarterly or as directed by the contracting agency. The progress reports include at a minimum the following: Work accomplished during the reporting period including basis for significant decisions; Daily Field Activity Logs; Work to be accomplished during the subsequent reporting period; Problems, real or anticipated, that should be brought to the attention of the contracting agency; Notification of any significant deviation from the agreed upon work plan; and Cash flow showing budget, current expenses, and budget deviations for each major task.

Summary Report – The Summary Report will include the following, as appropriate: Chronology and detailed description of site activities, site photographs, color print and digital files, landfill waste approvals, daily field logs, etc.

- 5.8 Does your company have an FTP or similar site for quick posting and distribution of information, drawings, field inspection reports, and other communications?
Yes ☒ No ☐

- 5.9 Describe your method of estimating construction costs and demonstrate the validity of that method.

ERG's approach to estimating construction costs is the following: 1) Determine the project's end Goal upon completion of the proposed remedial options (Scope of Work) 2) Break the Scope of Work into logical individual Tasks / Line Items; a) Utilize experience with similar projects and engineering calculations to assume potential worst case scenarios for each task in terms of material costs / quantities / volumes to complete each task using generally accepted industry practices, b) Solicit generic expertise from respected qualified contractors regarding potential approaches to each task, c) Estimate actual personnel labor time / rates and assign a projected contractor profit margin and overhead percentage on top of the Prevailing Wage rates to complete each task, d) Estimate heavy equipment usage rates in terms of hours and costs for each task, e) Determine required permits & ancillary costs for completing tasks, f) Project other known direct or indirect costs as available to complete each task

- 5.10 Describe your approach to minimizing construction cost over-runs.

ERG routinely provide its clients Construction Management (CM) services. This includes CM assignments from EGLE contract holders at sites of environmental contamination involving demolition, excavation, soil and groundwater remediation, and waste disposal characterization / manifesting, and site closure. This expertise has provided ERG with first-hand knowledge and experience in following the State of Michigan procurement process and construction management procedures. The process involves frequent on-site inspections, regular communications with construction contractors and agency Project Managers. ERG also adheres to contract Change Order requirements. Using ERG standard project design, construction procurement and construction management procedures that were similarly used on past EGLE ISID contract assignments, the following keys to our success will be followed: •Assign highly qualified engineers, scientists and inspectors to the project; •Assignments made for the life of the project; •Lead design engineer has the appropriate expertise for the assignment; •Lead design engineer plays key role in construction process; •Close coordination between design team and Construction Manager and Inspectors. The following procedures will be used for a typical ISID project assignment that leads to construction. The process begins with the


final design package: 1. Final Design, 2. Project Advertising, 3. Pre-Bid Meeting and Walk Through, 4. Addendums, 5. Bid Opening, 6. Bid Review and Contractor Recommendation, 7. Contract Award, 8. Pre-Construction Meeting, 9. Submittals, 10. On-Site Inspection, 11. Bulletins / Change Orders, 12. On-Site Testing / Evaluation, 13. Payment Requests, 14. Progress Meetings, 15. Operations and Maintenance Oversight, 16. Project Close Out

- 5.11 What percentage of the construction cost should be devoted to construction administration (office and field)?

5 to 10 %

- 5.12 What portion of the assigned work will be performed with your staff and what portion will be provided by sub-consultants?

95% Direct and less than 5% sub-consultant

- 5.13  On a typical project, what would be your response time, from the time receive a project assignment to starting investigation and design work? A typical project might be one involving several disciplines and in the neighborhood of a \$25,000 fee.)


2 to 5 days Days/Weeks

- 5.14 How do you assess whether a construction bidder is responsive and responsible?

By comparing the bid to our engineer's estimate and to other bids and checking references for projects the bidder has previously completed. Any subcontractors that we work with must be an approved ERG subcontractor, among other documents, requires a health & safety questionnaire on the company's health and safety policies.

- 5.15  Describe your experience with similar ISID contracts.

Refer to question 5.1 above.

- 5.16  Describe your approach to a construction contractor's request for additional compensation for a change in the project scope.

A request for additional compensation for a change in the project scope requires the execution of a Change Order (Contract Modification) before the work is performed. If the additional fee is fair and reasonable, then a minimal amount of time will be spent in its analysis. If the request for additional compensation appears excessive, then additional information will be requested to justify the amount, including the hours and billing rates for labor, and equipment fees and a bill of materials showing the purchase price and mark-up.

- 5.17 Is a sample of field activity logs detailing a 1-week period (from one of the three (3) prior experience sites) and a weekly report provided?

☒ Yes

☐ No

ARTICLE 6: PERSONNEL STAFFING

6.1 Is an organizational chart that includes each person on your project team and their identified roles for a typical assigned project provided?

☒ Yes

☐ No

6.2 Please fill out the following information regarding the personnel your firm considers key to the successful completion of the study or project scope of work:

Key Personnel 1

Name: Robert T. Reichenbach, CPG

Job Title: Program Manager

Labor Classification: P4

College Degree(s): BS, Geology, 1985

Has this individual successfully completed 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up to date 8-hour HAZWOPER refresher training? ☒ Yes ☐ No

Key Personnel 2

Name: Al Jordan, CPG

Job Title: Senior Project Manager

Labor Classification: P4

College Degree(s): BS, Geology, 1986

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒ Yes ☐ No

Key Personnel 3

Name: Timothy Hebert, CPG

Job Title: QA/QC Manager/Senior Project Manager

Labor Classification: P4

College Degree(s): BS, Geology, 1984; B.S. Biology, 1984

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒ Yes ☐ No

Key Personnel 4

Name: Michael Marshall

Job Title: Senior Project Manager

Labor Classification: P3

College Degree(s): BS, Fisheries & Wildlife, 1992

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒ Yes ☐ No

Key Personnel 5

Name: Laura Lambert

Job Title: Senior Geologist

Labor Classification: P3

College Degree(s): BS, Geology, 2002

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒ Yes ☐ ~~No~~

Key Personnel 6

Name: Mala Hettiarachchi, PhD, PE

Job Title: Senior Engineer/Project Manager

Labor Classification: P4

College Degree(s): B.S., Civil Engineering, 1999;

M.S. Water Resources Engineering, 2001; Ph.D., Environmental Engineering 2005

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒ Yes ☐ No

Key Personnel 7

Name: Craig Savage, CPG

Job Title: Senior Project Manager

Labor Classification: P4

College Degree(s): B.A., Environmental Studies, 1982; B.S., Geology, 1982;

M.S., Geology 1989

Has this individual successfully completed 40-hour HAZWOPER training with an up to

date 8-hour HAZWOPER refresher training? ☒Yes ☐No

Key Personnel 8

Name: Phillip Peterson

Job Title: Senior Project Manager/Health & Safety Director

Labor Classification: P4

College Degree(s): B.S. Geology, 1987

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒Yes ☐No

Key Personnel 9

Name: Christina Schroeder

Job Title: Project Manager

Labor Classification: P3

College Degree(s): B.S. Earth Science: Geology Focus, 2013

Has this individual successfully completed 40-hour HAZWOPER training with an up to date 8-hour HAZWOPER refresher training? ☒Yes ☐No

6.3 Does the Professional Project Manager (PM) have at least three years' experience as a PM? ☒Yes ☐No

6.4 Does the Professional PM have a minimum of 10 years' experience with similar projects? ☒Yes ☐No

6.5 Are the resumes for the key personnel provided? ☒Yes ☐No

ARTICLE 7: SPECIAL FACTORS

Include a brief description of your firm's special qualifications such as awards, recognitions, innovations, etc. that would pertain to this RFP. (As examples: any awards or recognition received by the firm or individuals for similar work, special approaches or concepts developed by the firm appropriate to this project, financial capacity, etc. Respondents may say anything they wish in support of their qualifications).

ERG is a full-service environmental professional firm. We do not anticipate the use of subconsultants for professional services. In addition, we have a laboratory for asbestos and air monitoring samples, which is NVLAP certified. A team of employees that are certified in asbestos work, from Inspector to Project Designer, and an employee certified for Lead Inspection. We operate our own Ground Penetrating Radar and Electromagnetic Pipe Locator. Subcontractors will be limited to ODCs for incidental services (drilling, analytical

laboratories, etc.).

Additionally, ERG staff have the following:

- Team Member (investigation and design stages) of the City of Calgary Biocell Landfill Project which received Consulting Engineers of Alberta (CEA) award in 2006; ASTech award for achievement in environmental innovation- 2008; APEGA Environment and Sustainability Award- 2009.
- Developed three-dimensional and one-dimensional numerical models to predict gas, heat and moisture transport and methane oxidation in methane biofilters. The biofilters are currently used at several metering stations owned by TransCanada Pipelines. The two numerical models are used by the University of Calgary in designing new generation methane biofilters. This work is published in several peer reviewed journals.
- Technical reviewer for Waste Management Journal (2008 to date).
- “Hodaka” award for the best graduating student, Water Resources Engineering, Asian Institute of Technology (AIT), Thailand
- Full graduate scholarship by the University of Calgary to pursue PhD.
- Full scholarship by the government of Norway based on education merits to pursue master’s degree at AIT
- First class honors and best graduating female student in Civil engineering, University of Moratuwa, Sri Lanka
- Certified Waste Treatment Plant Operator A-2d, B-3b
- Innovative Engineering Design award for methane gas recovery and treatment, 2001
- Board of Directors, Michigan Cattlemen’s Association (current)
- Board of Directors, Michigan Chapter of American Society of Biological and Agricultural Engineers (current)
- Board of Directors, Livingston County Farm Bureau (current) and immediate Past President
- Appointed member of the Livingston County Solid Waste Management Committee (current)
- Current President of MAEP.

ARTICLE 8: EXPERIENCE

8.1 Provide a client reference and brief descriptions of **at least three (3) projects in the last five years closely related to each of the project types** and professional services requested in this RFP. Emphasis shall be placed on recent work at sites of environmental contamination:

Project 1 Reference Information:

Scope of Work Services Provided:

- ☒ Phase I/Phase II/Baseline Environmental Assessment
- ☒ Ground Penetrating Radar (GPR)/Laser Induced Fluorescence (LIF) Field Screening
- ☒ Asbestos/Lead/Mold/Biohazard/Free Product/Regulated Waste Survey/Abatement
- ☒ Underground/aboveground Storage Tanks (UST/AST) Removal/Demolition/Soil Excavation/Closure

Project Name: City of Detroit – Commercial Environmental Due Diligence
Project Address: Multiple Sites
Key Personnel: Charles Badgerow, Robert Reichenbach, Susan Graves,
Project City/State/Zip: Detroit, Michigan
Contact Name/Telephone/Email: Tim Palazzolo, Detroit Demolition Department, 313-224-1849

Project 1 Description: ERG has been contracted to perform environmental due diligence services for dozens of vacant and dilapidated commercial properties targeted for demolition throughout the City of Detroit, including the Packard Plant. The City of Detroit Demolition Department contracted ERG to perform Engineering Surveys, Hazardous Materials Surveys (including asbestos), and Phase I Environmental Site Assessments (ESAs) for each property and Phase II ESAs as needed. The Phase I ESAs are conducted in compliance with ASTM E 1527–21, and the Engineering and Hazardous Materials Surveys are performed in compliance with the City of Detroit Scope of Services and include sampling and assessment for asbestos containing materials (ACMs) and inventorying other hazardous materials.

The City of Detroit Demolition Department requires that all Engineering and Hazardous Materials Surveys be completed within four weeks of contract award and all Phase I ESAs be completed within six weeks of contract award. To accommodate the short timeframe, ERG devoted several personnel to the project, and utilized work and task efficiencies to successfully complete the assessments within the allotted time. The properties were formerly occupied by various commercial businesses, including gas stations, dry cleaners, industrial manufacturers, grocery stores, dry goods stores, apartments, and other retail and/or service operations.

Although ERG has not yet performed Phase II investigations for the City of Detroit under the current 2022 contract, during previous contracts many of the parcels were identified with recognized environmental conditions (RECs) requiring further investigation. ERG conducted Phase II ESAs on dozens of the properties with RECs. The Phase II ESAs consisted of pre-investigation GPR studies, soil and groundwater sampling and analysis, and submitting a Baseline Environmental Assessment (BEA), as needed. Several of the sites were identified as former gasoline stations with USTs still in place. ERG has also performed contracting and UST removal oversight for several of the former gasoline stations.

Project 2 Reference Information:

Scope of Work Services Provided:

- ☒ Remediation systems design/construction oversight/O&M/decommissioning
- ☒ Landfill Maintenance/Monitoring
- ☒ Per- & Polyfluoroalkyl Substances (PFAS) Sampling/Mitigation/Remediation

Project Name: Closed Waterford Hills Landfill

Project Address: 7501 Maceday Lake Road, Waterford, Michigan

Key Personnel: Robert Reichenbach, Laura Lambert, Christina Schroeder

Project City/State/Zip: Waterford, Michigan 48329

Contact Name/Telephone/Email: Collen McLean EGLE RRD, SE District, 586-554-6489, mcleanc1@michigan.gov

Project 2 Description: The Michigan Department of Environmental, Great Lakes, and Energy (EGLE) requested that ERG oversee a Trade Contractor (TC), close out construction tasks, conduct groundwater sampling, oversee operations and maintenance and provide professional technical assistance regarding system operations of the Waterford Hills Sanitary Landfill (EGLE Site ID #63000165).

The closed landfill is located on 55-acres within the Pontiac Lake State Recreation Area, owned and maintained by the Michigan Department of Natural Resources (MDNR). ERG assists the EGLE effort to achieve compliance with the Great Lakes Water Authority (GLWA) discharge permit limits, monitor groundwater quality near the landfill and maintaining landfill gas control at the site. After landfill operations ceased, the MDNR Parks and Recreation Division assumed responsibility for closing the landfill. The closure project was completed in 1996, at which time the landfill gas extraction/flare system was placed into operation.

ERG currently administers the contract of a TC and evaluates their monitoring and maintenance of the leachate pretreatment system. ERG conducts leachate discharge monitoring in accordance with a GLWA wastewater permit. The GLWA permit requires semi-annual self-monitoring reports, semi-annual sampling the system following the accepted time weighted application, and annual site meeting with GLWA personnel.

ERG has redesigned the leachate pretreatment system to remove per- and polyfluoroalkyl substances (PFAS) in the waste stream prior to discharging into the sewer. ERG added bag filters (pore size ranges from 50 micron to 5 micron), three coal-based granular activated carbon vessels in a lead/lag series, and a strong base anion exchange resin polisher unit to the treatment process to meet the PFAS discharge levels established by the GLWA.

ERG also administers the contract for the operation and maintenance of the landfill gas recovery system. ERG reviews and administers data collected by the Trade Contractor in the landfill database summarizing gas monitoring results and prepare on a quarterly basis, figures that summarize vacuum influence at monitoring locations. ERG works with the Trade Contractor to operate, maintain, and monitor the flare system, as needed, to maximize gas capture and flare operation. ERG directs monitoring and rebalancing of the landfill gas collection system, as needed and to the extent practicable, to distribute vacuum to the areas where the system is not currently delivering vacuum. ERG also maintains the dedicated landfill gas monitoring equipment.

ERG samples 33 groundwater monitoring wells at this site at regular intervals. Sample analysis includes VOC, metals, and PFAS compounds. The low flow sampling for the PFAS compounds is conducted in accordance with ERG's PFAS Sampling Procedure

Matrix. As part of the sampling plan, groundwater samples were collected using standard low flow procedures using peristaltic pumps for purging. The pumps could not contain Teflon, low density polyethylene (LDPE) or fluoroelastomer components. During the sampling and purging process, new high-density polyethylene (HDPE) tubing and silicon tubing was required for each sampling location. The sampling procedures were used to prevent cross contamination of samples by PFAS. Due to the highly sensitive nature and potential cross contamination of PFAS, exceptional care was taken during the sampling and transport procedure; and to ensure the proper clothing, sampling materials and storage containers were used.

Project 3 Reference Information:

Scope of Work Services Provided:

- ☒ Asbestos/Lead/Mold/Biohazard/Free Product/Regulated Waste Survey/Abatement
- ☒ Environmental Investigation/Characterization/Pilot Tests/Feasibility Study

Project Name: Former Memphis Shell
Project Address: 80521 Main Street, Memphis, MI 48041
Key Personnel: Robert Zwald, Laura Lambert, Robert Reichenbach, Mala Hettiarachchi
Project City/State/Zip: Memphis, Michigan 48041
Contact Name/Telephone/Email: Kimberly Ethridge, EGLE RRD, SE District, 586-753-3811, ethridgek@michigan.gov

Project 3 Description: The Michigan Department of Environment, Great Lakes, and Energy (EGLE) contracted ERG to conduct a remedial investigation and feasibility study to determine the presence of soil and groundwater contamination and LNAPL, and define the vertical and horizontal extent of contamination, with the overall cleanup goal for soil and groundwater to reduce contaminant concentrations to below applicable residential criteria. The work was performed under the Indefinite Scope Indefinite Delivery (ISID) contract between the EGLE and ERG (2019 ISID – Contract No. 00756).

The Memphis Shell Site is a former LUST facility located in the rural town of Memphis, in northern Macomb County. The Site is a former service station that operated from the early 1970s to approximately 2001. Three confirmed releases from the UST system had been reported from 1998 to 1999, which resulted in LNAPL and dissolved petroleum contaminants migrating approximately 250 feet from the former USTs to the east-southeast direction, under a state highway and beneath residential homes on the east side of the road.

Additional remedial investigation was conducted, which included an LIF study and the installation of several monitoring wells. Based on the investigation, the estimated area of the LNAPL plume was approximately 17,000 square feet and was in the upper portion of a sandy aquifer approximately 40 to 45 feet below grade.

As part of the remedial actions, existing USTs and grossly contaminated soil, that acted as the source of groundwater contamination, were removed. After UST removal, a feasibility study was performed to determine the best way to reduce the mass of the LNAPL plume. Based on the feasibility analysis, in-situ chemical oxidation (ISCO) with sodium persulfate and sodium hydroxide, was selected as the most suitable and cost-effective remedial option for the site. A successful pilot test was conducted in August 2015 and full scale ISCO was conducted in March 2016 and August 2016.

Post-injection monitoring activities are on-going. Quarterly groundwater sampling using low-flow techniques and free product/NAPL checks indicate a major decrease in LNAPL mass.

Project 4 Reference Information:

Scope of Work Services Provided:

- ☒ Ground penetrating radar (GPR)/Laser-Induced Fluorescence (LIF) field screening
- ☒ Environmental/ Rotosonic drilling/well abandonment
- ☒ Environmental investigation/characterization/pilot tests/feasibility study

Project Name: Former Gus's Mini Mart

Project Address: 44974 North Gratiot Avenue, Clinton Township

Key Personnel: Robert Zwald, Robert Reichenbach, Mala Hettiarachchi, Christina Schroeder,

Project City/State/Zip: Clinton Township, Michigan, 48036

Contact Name/Telephone/Email: Kimberly Ethridge, EGLE RRD, SE District, 586-753-3811, ethridgek@michigan.gov

Project 4 Description: The Michigan Department of Environment, Great Lakes, and Energy (EGLE) contracted ERG to conduct a remedial investigation and feasibility study to determine the presence of soil and groundwater contamination and light non-aqueous phase liquid (LNAPL), and define the vertical and horizontal extent of contamination, with the overall cleanup goal for soil and groundwater to reduce contaminant concentrations to below applicable residential criteria. The work was performed under the Indefinite Scope Indefinite Delivery (ISID) contract between the EGLE and ERG (2019 ISID – Contract No. 00756).

The Site operated as a gasoline service station and convenience store since the early 1950s until approximately 2006. A Confirmed Release (C-0224-01) was reported for the Site on September 28, 2001.

ERG performed a remedial investigation (RI) which included laser-induced fluorescence (LIF) technology to assist in the delineation of residual and LNAPL in the subsurface. The initial LIF boring was advanced in an area of presumed contamination near the center of the Site, demonstrating a strong signal. From there, the LIF borings were advanced north or south of the initial boring at approximate ten-foot intervals until a boring location demonstrated little to no signal, (indicating lack of PAH compounds in the soil) or until the property boundary was reached. The process was repeated for the east and west directions from the initial boring.

Following the LIF investigation, ERG applied for a permit from the Michigan Department of Transportation (MDOT) to conduct soil borings in the Right-of-Way (ROW) along the north property boundary adjacent to Hall Road (M-59) and along the west property boundary adjacent to North Gratiot Avenue (M-3) to delineate the vertical and horizontal extent of on and off-site contamination.

Based on the feasibility analysis, remedial activities were conducted in 2020 which included excavation activities to remove the remaining USTs and impacted soil and groundwater, and in-situ chemical oxidation (ISCO) applied to the excavation basin prior to backfilling.

Ongoing groundwater monitoring indicates a decrease in LNAPL migrating off-site.

Project 5 Reference Information:

Scope of Work Services Provided:

- ☒ Environmental Investigation/Characterization/Pilot Tests/Feasibility Study
- ☒ Remediation Systems Design/Construction Oversight/O&M/Decommissioning
- ☒ Vapor Intrusion Assessments/Risk Mitigation/Design/Installation/O&M Services

Project Name: 4 Corners Square

Project Address: 1451 Union Lake Road, White Lake Township,
Michigan

Key Personnel: Robert Reichenbach, Laura Lambert, Mala Hettiarachchi, Matthew Germane,

Project City/State/Zip: White Lake Township, Michigan,
48386

Contact Name/Telephone/Email: Shakir W. Alkhafaji, 248-351-8800,
alkhafaji@veritaslimited.com

Project 5 Description: ERG conducted site investigations and corrective action activities on behalf of 4 Corners Square, LLC for the planned residential and commercial developments in White Lake Township, Oakland County, Michigan. Historically, portions of the planned development area were used by a gasoline station and an automotive repair facility.

The site investigations identified two contaminant plumes: a petroleum plume on the southwestern portion of the Site; and a chlorinated plume near the planned residential buildings. Because the volatilization of volatile organic compounds (VOCs) from impacted environmental media could create an increased risk for vapor intrusion (VI) into the overlying buildings, ERG designed sub-slab depressurization (SSD) systems to mitigate VI into the new buildings' indoor air.

ERG designed and engineered VI barrier with a passive sub-slab venting system, which can be converted to an active SSD system in case the vapor barrier is compromised. The system was installed for the fast-food restaurant building during the construction in 2018. The horizontal extraction piping of the passive sub-slab venting system consists of high-density polyethylene (HDPE) geo-composite gas vents. A similar system was designed and constructed for the retail building in 2019.

An similar system was designed for another site building and will be installed during the future building construction. The system can be activated, if needed, by installing an appropriately sized blowers to eliminates the movement of soil gas into the building's indoor air space by creating a negative pressure field beneath the floor slab.

A combination of building pressurization to maintain a positive indoor pressure relative to the sub-slab area and SSD systems designed in accordance with USEPA/625/R-92/016 were used to mitigate potential sub-slab VI into the buildings. The positive pressure inside the buildings causes the indoor air to be pushed out of the building rather than being drawn into the building. Therefore, the United States Environmental Protection Agency (USEPA) recognized the building's heating, ventilation, and air conditioning (HVAC) system as a VI mitigation technique if it can maintain adequate positive pressure. ERG worked closely with the HVAC contractor in calibrating the HVAC systems to keep adequate positive pressure for VI mitigation purposes and carbon monoxide removal in the underground parking structures of the residential buildings.

The new development includes two, three-story residential loft buildings, two multi-tenant retail buildings, and a fast food restaurant. ERG provided due care compliance oversight

during construction which included monitoring soils for VOCs using a photo-ionization detector (PID), and ambient air monitoring for worker safety using a 5-gas meter.

Project 6 Reference Information:

Scope of Work Services Provided:

- ☒ Remediation Systems Design/Construction Oversight/O&M/Decommissioning
- ☒ Vapor Intrusion Assessments/Risk Mitigation/Design/Installation/O&M Services
- ☒ Landfill Maintenance/Monitoring

Project Name: Dutton Corporate Centre (Sanicem Landfill)

Project Address: 4430 Lapeer Road, Auburn Hills, Michigan 48326

Key Personnel: Robert T. Reichenbach, Robert J. Zwald, Laura Lambert, Charles Badgerow

Project City/State/Zip: Auburn Hills, Michigan 48326

Contact Name/Telephone/Email: Collen McLean EGLE RRD, SE District, 586-554-6489, mcleanc1@michigan.gov

Project 6 Description: ERG personnel performed due diligence and remediation services for the Brownfield redevelopment of the former unregulated Sanicem Landfill site. This project involved the redevelopment of the former Sanicem Landfill and adjoining property. The proposed site uses were planned to be a high technology office and industrial park. The site consists of approximately 145 acres in Oakland County, Michigan. The landfill was never lined or capped, nor were adequate leachate collection or methane venting systems installed. The landfill ceased operations in the early 1980s. Based on the results of the preliminary due diligence study, it was determined that the site would be suitable for redevelopment, provided the appropriate remedial measures and due care obligations were instituted. An Act 381 Work Plan was prepared, submitted and approved by the State of Michigan. The Work Plan included landfill gas control, venting design and implementation; design and implementation of structure protection against the accumulation of landfill gas; leachate collection and treatment design and implementation; remedial investigations and due care plans; land balancing and capping; contaminated soil removal and disposal; geotechnical controls; and, O&M.

ERG also operated and maintained the landfill gas recovery system. ERG collected gas monitoring data quarterly, summarized gas monitoring results and prepared quarterly reports that included tables/ figures that summarized vacuum influence at monitoring locations.

Gas monitoring is on-going at the properties directly adjacent to the former Dutton Corporate Center property to the north. The work is performed under the Indefinite Scope Indefinite Delivery (ISID) contract between the EGLE and ERG (2019 ISID – Contract No. 00756).

Project 7 Reference Information:

Scope of Work Services Provided:

- ☒ Landfill Maintenance/Monitoring
- ☒ Per-& Polyfluoroalkyl Substances (PFAS) Sampling/Mitigation/Remediation

Project Name: RACER Trust – Former Davison Road Landfill

Project Address: Davison Road at Donnegan Street, Burton, Michigan

Key Personnel: Susan Graves, Robert J. Zwald, Laura Lambert, Robert T. Reichenbach, Taylor Vergin
Project City/State/Zip: Burton, Michigan, 48509
Contact Name and Telephone #: Dave Favero, RACER Trust, 517-879-9525

Project 7 Description: Revitalizing Auto Communities Environmental Response Trust ("RACER"). Trust requested ERG to conduct site investigation and remedial activities at the former General Motors - Davison Road Landfill site located in Burton, Michigan. Activities are being conducted in accordance with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 requirements. In addition, ERG's efforts on this project have included quarterly and annual reporting and budget preparation in accordance with the Environmental Response Trust Consent Decree and Settlement Agreement as decreed when a bankruptcy court approved the formation of the RACER Trust.

In the 1970s, portions of the Site were used as a permitted landfill by the GM Buick Motor Division facility in Flint, Michigan. GM disposed of construction debris, miscellaneous inert solid waste, and foundry sand. Site investigations including soil and groundwater assessment have been performed at the Site from 1996 through November 2012. The historical analytical results of the soil and groundwater samples from previous investigations indicate the presence of various volatile organic compounds (VOCs), semi-VOCs (SVOCs) and metals at concentrations that exceed EGLE Part 201 residential and non-residential cleanup criteria for direct contact, drinking water and drinking water protection, groundwater surface water interface, and/or groundwater surface water interface protection. Additionally, several metals concentrations exceeded the Statewide Default Screening Levels.

ERG prepared an Investigative Work Plan (IWP) to address gaps in the existing data. The investigation activities in the IWP included installation of soil borings and monitoring wells, groundwater monitoring well and surface water sampling, aquifer tests and analysis; and, property boundary and topographic surveys.

The relevant exposure pathways at the Site include groundwater/surface water interface protection (GSIP), non-residential drinking water protection (DWP) and non-residential drinking water (DW). ERG is proposing eliminating the DWP and DW pathway by implementing a restrictive covenant (RC) prohibiting the use of potable water and requiring that the property remain non-residential. The remaining complete exposure pathway is GSIP to an adjacent creek (Gilkey Creek) which is part of the Flint River drainage basin. ERG is proposing the elimination of this pathway by demonstrating that any concentrations on Site will dilute to concentrations below the applicable cleanup criteria.

In 2018, EGLE requested select groundwater monitoring wells at the Site be sampled for analysis of Perfluorinated chemicals (PFCs), including Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS). ERG prepared a PFOS Work Plan and PFOS Sampling Operation Procedures Plan. As part of the sampling plan, groundwater samples were collected using standard low flow procedures using peristaltic pumps for purging. The pumps could not contain Teflon, low density polyethylene (LDPE) or fluoroelastomer components. During the sampling and purging process, new high-density polyethylene (HDPE) tubing and silicon tubing was required for each sampling location. The sampling procedures were used to prevent cross contamination of samples by PFCs. Due to the highly sensitive nature and potential cross contamination of PFOS, exceptional care was taken during the sampling and transport procedure; and to ensure the proper clothing, sampling materials and storage containers were used.

Project 8 Reference Information:

Scope of Work Services Provided:

- ☒ Asbestos/Lead/Mold/Biohazard/Free Product/Regulated Waste Survey/Abatement
- ☒ Brownfield Development
- ☒ Phase I/Phase II/Baseline Environmental Assessment

Project Name: Former Eloise Psychiatric Hospital
Project Address: 30712 Michigan Avenue
Key Personnel: Robert Zwald, Charles Badgerow, Jacqueline Freiberg
Project City/State/Zip: Westland, Michigan 48186
Contact Name/Telephone/Email: John G. Hambrick, 586-291-2836,
john@jghconsultingllc.com

Project 8 Description: ERG is providing due diligence, assessment, and Brownfield services for the redevelopment of the former Eloise Psychiatric Hospital in Westland, Michigan. The project involves the redevelopment of the former Eloise Psychiatric Hospital including the environmental assessment, due care evaluation and management of contaminated soil and groundwater present at the property, asbestos assessment and mitigation, demolition of the former boiler house, bakery and fire houses (existing blighted structures), creation of new commercial space, and preservation of the historic Kay Beard Building. The project is expected to be completed in three phases with a completion date of 2023. The first phase would include partial rehabilitation of the Kay Beard Building and the launch of a haunted attraction themed event center. Followed by the development of additional paranormal themed entertainment attractions and a paranormal themed hotel, including complete historic restoration of the original lobby and the creation of a themed "ghost bar and restaurant." ERG is in the process of completing a Phase II Environmental Site Assessment (ESA), a Baseline Environmental Assessment (BEA) and Due Care documentation plans for the new property ownership team. In addition, ERG is providing the developer with Brownfield incentive services, including general incentives consulting services, assisting the City of Westland with the development of a Brownfield Redevelopment Plan, procurement of a grant for cleanup of petroleum related contamination, and the preparation of an Act 381 Work Plan for school tax capture, in addition to local tax capture. The proposed Brownfield eligible activities for the redevelopment total approximately \$5,800,000, and include: Phase I and II ESA and BEA, ACM survey and abatement, Due Care Investigation, Contaminated Soil Disposal, Demolition & Asbestos Abatement, Due Care Activities/Vapor Mitigation

Project 9 Reference Information:

Scope of Work Services Provided:

- ☒ Brownfield Development
- ☒ Environmental/Roto Sonic Drilling/Well Abandonment
- ☒ Per- & Polyfluoroalkyl Substances (PFAS) Sampling/Mitigation/Remediation

Project Name: Muskegon Convention Center
Project Address: 460 W. Western Avenue and Portions of 939 and 955 Third Street
Key Personnel: Al Jordan, Mike Marshall, Jackie Freiberg, Ben Jordan
Project City/State/Zip: Muskegon, Michigan, 49440
Contact Name/Telephone/Email: Andrea Ryswick, EGLE Brownfield Coordinator, 616-401-0827, ryswicka@michigan.gov

Project 9 Description: Due to PFOS impact at the Site, ERG prepared, on behalf of the

City of Muskegon, an application for a \$499,999 Brownfield Redevelopment Site Assessment Grant that would help cover the pre-treatment and disposal costs to the sanitary sewer. Once the grant was awarded, a temporary PFOS treatment system was installed at the Site and ERG performed regular PFOS pre- and post-treatment system sampling to ensure the efficiency of the system and to ensure the water being discharged into the sanitary system fell below their regulatory limit. The dewatering treatment system ran from November 15, 2019 through the morning of December 14, 2019 discharging a total of 14,102,937 gallons of treated dewatering effluent into the sanitary system. The treatment system ran until December 14, 2019 when it was shut off after two consecutive weeks of influent wastewater samples revealing no detectable levels of PFOS. From the afternoon of December 14, 2019 through December 30, 2019, a total of 6,808,803 gallons of untreated dewatering wastewater was discharged into the sanitary sewer. Additionally, during the construction activities at the Site, an orphan oil well was uncovered, and oil and venting gases were slowly bubbling from the well. ERG immediately alerted EGLE-OGMD. An additional \$200,001 of brownfield funding was awarded to the City of Muskegon for the emergency response activities, impacted soil sampling and excavation oversight, nuisance odor management, and air monitoring during the well abandonment which ERG conducted during this project.

Project 10 Reference Information:

Scope of Work Services Provided:

- ☒ Asbestos/Lead/Mold/Biohazard/Free Product/Regulated Waste Survey/Abatement
- ☒ Brownfield Development
- ☒ Phase I/Phase II/Baseline Environmental Assessment
- ☒ Vapor Intrusion Assessments/Risk Mitigation/Design/Installation/O&M Services

Project Name: Sakura Way
 Project Address: 42750 Grand River Avenue
 Key Personnel: Robert J. Zwald, Charles Badgerow, Jacqueline Freiberg, Kaleb Schetter
 Project City/State/Zip: Novi, Michigan 48375
 Contact Name/Telephone/Email: Darian L. Neubecker, 248-282-1430, dneubecker@robertsonhomes.com

Project 10 Description: ERG provided due diligence, assessment, and Brownfield services for the redevelopment of a 15-acre property in Novi, Michigan. R.B. Aikens Associates and Robertson Homes, Inc. will be developing the Property as Sakura Way, a mixed-use development in the heart of one of Michigan's largest Asian communities. The development is intended to be a "best in class" collection of several Asian restaurants along with supporting retail and over 200 units of residential apartments and town homes. ERG completed a Phase I Environmental Site Assessment (ESA), a Phase II ESA, and is in the process of completing a Baseline Environmental Assessment (BEA) and Due Care documentation plans for the new property ownership team. In addition, ERG provided the developer with Brownfield incentive services, including general incentives consulting services, assisting the City of Novi with the development of a Brownfield Redevelopment Plan, and the preparation of an Act 381 Work Plan for school tax capture. The proposed Brownfield eligible activities for the redevelopment total approximately \$2,000,000, and include: Phase I and II ESA and BEA, Due Care Investigation, Asbestos Abatement,

Removal/Transport/Disposal of Contaminated Soils, and Due Care Activities and Vapor Mitigation.

Project 11 Reference Information:

Scope of Work Services Provided:

- ☒ Ground Penetrating Radar (GPR)/Laser-Induced Fluorescence (LIF) Field Screening
- ☒ Underground/Aboveground Storage Tank Removal/Demolition/Soil Excavation

Project Name: Former Herman and Hanks Service Station
Project Address: 1604 Martin Luther King Avenue
Key Personnel: Robert T. Reichenbach, Christina Schroeder
Project City/State/Zip: Flint Michigan, 48503
Contact Name/Telephone/Email: Paul Bucholtz, EGLE RRD, Lansing District, 517-243-7574, bucholtzp@michigan.gov

Project 11 Description: Herman and Hanks is a former gasoline and service station that operated from approximately 1928 through the early 2000's. ERG was retained to conduct an investigation that included a ground penetrating radar (GPR) survey, to locate suspected USTs beneath the site building, and environmental sampling to delineate the petroleum impacted soils for excavation boundaries. It was determined the contaminated soils were extending beneath the vacant onsite building. ERG coordinated the demolition of the building including securing all permits and terminating utilities.

Remediation activities were completed from March through December, 2020, in accordance with the 2017 ISID Soil and UST Removal Contract (Contract No. 00687). The overall project goal was to remove the petroleum contamination in the soil and groundwater, possible USTs, underground hoists, and vault pits.

Project 12 Reference Information:

Scope of Work Services Provided:

- ☒ Asbestos/Lead/Mold/Biohazard/Free Product/Regulated Waste Survey/Abatement

Project Name: Grand Blanc Community Schools (AHERA Compliance and consulting and Mercury Abatement)
Project Address: Multiple addresses in Grand Blanc, Michigan
Key Personnel: Phil Peterson, Charles Badgerow, Kaleb Schetter
Project City/State/Zip: Grand Blanc, Michigan 48439
Contact Name/Telephone/Email: Jeff Cushman, 810-591-6012, jcushman@gbcs.org

Project 12 Description: All schools must comply with Asbestos Hazard Emergency Response Act (AHERA) regulations which require local educational agencies to inspect their school buildings for asbestos-containing building material, prepare asbestos management plans and perform asbestos response actions to prevent or reduce asbestos hazards. Grand Blanc needed to find a provider to inspect, reinspect, conduct periodic surveillance and keep records to comply with AHERA.

ERG performed six-month surveillance and 3-year reinspection activities for Grand Blanc Community Schools (GBCS) per AHERA regulations. In addition, ERG performed asbestos sampling in areas prior to renovation activities to ensure no asbestos would be

disturbed, oversaw asbestos abatement activities, and was on call for quick-response asbestos sampling during renovation activities.

Upon request of GBCS, ERG sampled P-traps and drains in chemistry and biology classrooms in approximately eight schools. The results indicated that mercury was present at elevated concentrations. Therefore, ERG removed and properly disposed of the mercury containing P-traps and replaced them with new P-traps.

Project 13 Reference Information:

Scope of Work Services Provided:

- ☒ Environmental/ Rotosonic Drilling/Well Abandonment
- ☒ Environmental Investigation/Characterization/Pilot Tests/Feasibility Study
- ☒ Remediation Systems Design/Construction Oversight/O&M/Decommissioning
- ☒ Vapor Intrusion Assessments/Risk Mitigation/ Design/Installation/O&M Services

Project Name: State of Michigan – 1250 Madison Site
Project Address: 1246-1258 Madison Ave. SE, Grand Rapids, Michigan
Key Personnel: Alfred J. Jordan, Mike Marshall, Robert T. Reichenbach
Project City/State/Zip: Grand Rapids, Michigan, 49507
Contact Name/Telephone/Email: Brian Flickinger, EGLE RRD, 517-420-5886, flickingerb@michigan.gov

Project 13 Description: The Michigan Department of Environmental, Great Lakes, and Energy (EGLE) requested ERG to conduct a series of investigations and corrective action activities at the orphaned site designated as 1250 Madison located in Grand Rapids, Kent County, Michigan. The Site is a former service station. The work was performed under the Indefinite Scope Indefinite Delivery (ISID) contract between EGLE and ERG (2019 ISID Environmental Services – Contract No. 00756).

The investigations were completed to determine the extent of the soil, groundwater, and soil gas contamination at the Site that resulted from releases C-1258-98 and C-0868-99 reported in December 1998 and August 1999, respectively. The 1250 Madison Avenue Site is an orphaned LUST site. ERG completed soil borings, groundwater monitoring, and vapor monitoring points on-site and off-site adjacent to the building located at 1258 Madison Avenue SE.

ERG oversaw the installation of a sub-slab depressurization system (SSDS) at the 1258 Madison site within the northernmost commercial suite at the property. The SSDS system was installed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a fan-powered vent drawing air from beneath the slab.

Project 14 Reference Information:

Scope of Work Services Provided:

- ☒ Ground Penetrating Radar (GPR)/Laser-Induced Fluorescence (LIF) Field Screening
- ☒ Underground/Aboveground Storage Tank Removal/Demolition/Soil Excavation

Project Name: Berkley Coolidge Wiltshire-Former Auto
Project Address: 2859 Coolidge Highway
Key Personnel: Christina Schroeder, Laura Lambert, Justin Collinash
Project City/State/Zip: Berkley Michigan, 48072

Contact Name/Telephone/Email: Kimberly Ethridge, EGLE RRD, SE District, 586-753-3811, ethridgek@michigan.gov

Project 14 Description: The Michigan Department of Environment, Great Lakes, and Energy (EGLE) retained Environmental Resources Group, LLC (ERG) to conduct excavation and underground storage tank (UST) removal activities at 2859 Coolidge Highway, Berkley, Oakland County, Michigan. The work was performed under the 2017 Indefinite Scope Indefinite Delivery (ISID) Design-Build Services for Tank and Soil Removal contract between EGLE and ERG (2017 Design/Build ISID – Contract No. 00687).

The site operated as an automobile service station from the early 1950's to the late 1970's. ERG conducted a ground penetrating radar (GPR) survey, utility locate and inspection, prior to excavation. Remediation activities including removal of petroleum contaminated soil and groundwater, USTs, and a concrete vault.

Project 15 Reference Information:

Scope of Work Services Provided:

☒ Per-& Polyfluoroalkyl Substances (PFAS) Sampling/Mitigation/Remediation

Project Name: Capital Region Airport Plane Crash Spill Response
Project Address: Dewitt Road/Capital Region International Airport, Lansing, Michigan
Key Personnel: Mike Marshall, Robert T. Reichenbach
Project City/State/Zip: Lansing, Michigan 48906
Contact Name/Telephone/Email: Ron O'Neil, 517-886-3729, roneil@craa.com

Project 15 Description: The Capital Region Airport Authority (CRAA) contracted ERG to conduct emergency response actions following the crash of a private jet during takeoff on August 24, 2021. The initial emergency response actions and subsequent remedial actions were completed to address the release of approximately 300 gallons of Jet A Fuel from the airplane's fuel tank onto the ground surface, which subsequently caught fire due to the impact. The airport fire department put out the fire with approximately 105 gallons of aqueous film forming foam (AFFF) mixed with 8,000 to 10,000 gallons of water. The AFFF contained PFAS. Due to heavy rainfall the night of the crash, the fire suppression water mixed with the remnant fuel / AFFF and rainwater flowed into the airport's surface drainage system adjacent to perimeter security road and toward the Jones Branch of the Reynolds County Drain, which flows into the Grand River.

The Scope of Work included emergency response services to prevent the immediate migration of the jet fuel / PFAS impacted fire suppression water and storm water into the county drain system. Once the immediate threat to the county drain was contained, ERG oversaw the remediation of the PFAS / jet fuel impacted storm / fire suppression water mixture and completed impacted soil removal and verification of soil remediation (VSR) sampling to document the substantial cleanup of the release(s).

ERG coordinated the response activities with the Michigan Department of Environment, Great Lakes and Energy, along with the Airport management and the Clinton County Drain Commission. Emergency response activities completed by ERG and their response contractors beginning the night of the release resulted in the recovery of approximately 9,000 gallons of runoff / rainwater containing aviation fuel and PFAS-containing AFFF. Additionally, sorbent booms were deployed adjacent to culverts assisting in the halt of fuel and AFFF into the County's Reynolds Drain system.

Following the initial emergency response actions, between late August and November 2021, ERG directed the remedial efforts as their contractors excavated and disposed of 1,336.97 tons of petroleum and PFAS impacted soils and removed an additional 8,400 gallons of impacted surface water. Impacted soils were removed from the ground surface and drainage channels along the flow path of the runoff from the crash site downstream to the confluence with the Reynolds Drain system.

Analytical results of the VSR samples revealed the response actions remediated the jet fuel release at the site to below Part 201 cleanup criteria standards. The analytical results also revealed that the majority of the PFAS impacted soils containing one (1) or more of the seven (7) regulated PFAS constituents were lessened in concentration from the remedial excavation activities. Following completion of the remedial activities, slight concentrations of various PFAS constituents remain in the soil at the site. However, it appears that of the Michigan regulated PFAS constituents (PFOS and PFOA), the majority of impact directly related to the August 24, 2021 release of AFFF has been removed from the site.

The project costs were approximately \$375,000 to complete the emergency response and subsequent remedial actions of the release of 300 gallons of jet fuel and 105 gallons of PFAS containing AFFF used for fire suppression.



Environmental Resources Group

28003 Center Oaks Court • Suite 106 • Wixom, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

January 10, 2023

Ms. Bridget Walsh
Department of Technology, Management and Budget
State Facilities Administration, Design and Construction Division

Re: Department of Technology, Management and Budget Part II-Cost Proposal – 2023 ISID for Environmental Services

Dear Ms. Walsh,

Environmental Resources Group, LLC. (ERG) is pleased to submit the enclosed Cost Proposal. We have reviewed the project information and understand the scope of work.

Our philosophy of moderate overhead and operating costs, combined with the vast experience and technical capabilities of our personnel, makes ERG one of the best values for these services. Our highly competitive rates are presented in the Position Classification Form provided.

ERG acknowledges receipt of Addenda No. 1 dated December 7, 2022, and Addenda No. 2 dated December 21, 2022.

Thank you for the opportunity to submit this proposal and we look forward to working with you on this project. If you have any questions, please contact me at 248-773-7986.

Respectfully submitted,

Robert T. Reichenbach, C.P.G.
President

Enclosures: Part II Cost Proposal



PART II - COST PROPOSAL

DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

2023 ISID FOR ENVIRONMENTAL SERVICES RFP

PROFESSIONAL ENVIRONMENTAL CONSULTING SERVICES

VARIOUS LOCATIONS, MICHIGAN

PREPARED FOR:

DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION

SUBMITTED BY:

ENVIRONMENTAL RESOURCES GROUP, LLC
28003 CENTER OAKS CT., # 106
WIXOM, MICHIGAN 48393
FEDERAL ID# 45-4274942

DATE:

JANUARY 10, 2023

POSITION, CLASSIFICATION AND EMPLOYEE BILLING RATE INFORMATION

PROFESSIONAL SERVICES - 2023 ENVIRONMENTAL ISID

Firm Name Environmental Resources Group LLC

Yearly Percentage Billing Rate Increase 2023-0.0%, 2024-0.0%, 2025-0.5%, 2026-1.0%, 2027-0.0%

LEVEL	CLASSIFICATION	Year 2023	Year 2024	Year 2025	Year 2026	Year 2027
P4	Robert T. Reichenbach, CPG Program Manager**	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P4	Robert J. Zwald, Senior Project Manager	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P4	Alfred Jordan II, CPG Senior Project Manager**	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P4	Gus George, PE Senior Project Manager	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P4	Timothy Hebert, CPG Senior Project Manager**	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P4	Mala C. Hettiarachchi, PE Senior Engineer**	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P4	Matthew Germane, PE, Senior Project Engineer	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P3	Michael Marshall, Sr. Project Manager**	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P4	Robert Elliott, Sr. Project Manager	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P3	Phillip Peterson, Sr. Project Manager**	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Linda Hensel, Sr. Project Manager	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Laura Lambert, Sr. Geologist**	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Keith Christofferson, Senior Project Manager	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Jeffrey Berntsen, Senior Project Manager	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P4	Donald Klingler, Senior Project Manager	\$165.00	\$165.00	\$165.83	\$167.48	\$167.48
P3	Craig Savage, CPG, Senior Project Manager**	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	John Rabideau, Senior Project Manager	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Christina Schroeder, Project Manager**	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Charles Badgerow, Senior Geologist	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P3	Susan Graves, Senior Geologist	\$130.00	\$130.00	\$130.65	\$131.96	\$131.96
P2	Taylor Vergin, Project Engineer	\$100.00	\$100.00	\$100.50	101.51	101.51
P2	Justin Collinash, Senior Environmental Scientist	\$100.00	\$100.00	\$100.50	101.51	101.51
P2	Gabrielle LaFayette, Staff Geologist	\$100.00	\$100.00	\$100.50	101.51	101.51
P2	Erik Eikey, Staff Geologist	\$100.00	\$100.00	\$100.50	101.51	101.51
P2	Lindsey Stone, Project Geologist	\$100.00	\$100.00	\$100.50	101.51	101.51

POSITION, CLASSIFICATION AND EMPLOYEE BILLING RATE INFORMATION

PROFESSIONAL SERVICES - 2023 ENVIRONMENTAL ISID

Firm Name Environmental Resources Group LLC

Yearly Percentage Billing Rate Increase 2023-0.0%, 2024-0.0%, 2025-0.5%, 2026-1.0%, 2027-0.0%

P1 Kaleb Schetter, Staff Geologist	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
P2 Jacqueline Freiberg, Staff Geologist/Project Mgr.	\$100.00	\$100.00	\$100.50	101.51	101.51
P2 Kristin Peterson, Industrial Hygienist	\$100.00	\$100.00	\$100.50	101.51	101.51
P1 Sarah Zrull, Field Geologist	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
P1 Lance Crenno, Field Geologist	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
P1 Jacob Henning, Staff Engineer	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
P1 Hannah Kamper, Field Geologist	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
P1 Evan Monteith, Field Scientist	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
P1 Evan Sutherland, Field Geologist	\$84.00	\$84.00	\$84.42	\$85.26	\$85.26
T3 David Yost, Senior Technician/Geologist	\$89.00	\$89.00	\$89.45	\$90.34	\$90.34
T3 Benjamin Jordan, Senior Technician	\$89.00	\$89.00	\$89.45	\$90.34	\$90.34
T2 Alan Reichenbach, Field Technician	\$75.00	\$75.00	\$75.38	\$76.13	\$76.13
T1 Lauren Wallace, Field Technician	\$65.00	\$65.00	\$65.33	\$65.98	\$65.98
T1 Holly Grow, Field Technician	\$65.00	\$65.00	\$65.33	\$65.98	\$65.98
T1 Josh Jordan, Field Technician	\$65.00	\$65.00	\$65.33	\$65.98	\$65.98
T1 Kaila Schwanitz, Lab Technician	\$65.00	\$65.00	\$65.33	\$65.98	\$65.98
TS Rebecca Bloom, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05
TS Kylie Kutney, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05
TS Catlin Sather, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05
TS Barbara Billings, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05
TS Kristine Smith, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05
TS Christina Gergis, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05
TS Amy Mazzaresse, Administrative	\$70.00	\$70.00	\$70.35	\$71.05	\$71.05

*Billing Rate will be in accordance with the attached guideline page for instructions regarding the "Overhead Items used for Professional Billing Rate Calculation," and the attached "Sample Standard Contract for Professional Services," Article II, Compensation.

** Key Project Personnel

APPENDIX 3
PROFESSIONAL CERTIFICATION
FORMS
(See pages 299 - 302)

APPENDIX 4

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICES CONTRACTOR FIRM'S HOURLY BILLING RATE CALCULATION

<p align="center">DEPARTMENT OF TECHNOLOGY, MANAGEMENT & BUDGET, VEHICLE AND TRAVEL SERVICES SCHEDULE OF TRAVEL RATES FOR CLASSIFIED AND UNCLASSIFIED EMPLOYEES Effective January 1, 2023</p>

MICHIGAN SELECT CITIES*

	Individual	Group Meeting (pre-arranged and approved)
Lodging**	\$85.00	
Breakfast	\$11.75	\$14.75
Lunch	\$11.75	\$14.75
Dinner	\$28.00	\$31.00

MICHIGAN IN-STATE ALL OTHER

	Individual	Group Meeting (pre-arranged and approved)
Lodging**	\$85.00	
Breakfast	\$9.75	\$12.75
Lunch	\$9.75	\$12.75
Dinner	\$22.00	\$25.00
Lodging	\$51.00	
Breakfast	\$9.75	
Lunch	\$9.75	
Dinner	\$22.00	
Per Diem Total	\$92.50	

OUT-OF-STATE SELECT CITIES*

	Individual	Group Meeting (pre-arranged and approved)
Lodging**	Contact Conlin Travel	
Breakfast	\$15.00	\$18.00
Lunch	\$15.00	\$18.00
Dinner	\$29.00	\$32.00

OUT-OF-STATE ALL OTHER

	Individual	Group Meeting (pre-arranged and approved)
Lodging**	Contact Conlin Travel	
Breakfast	\$11.75	\$14.75
Lunch	\$11.75	\$14.75
Dinner	\$27.00	\$30.00
Lodging	\$51.00	
Breakfast	\$11.75	
Lunch	\$11.75	
Dinner	\$27.00	
Per Diem Total	\$101.50	

Incidental Costs Per Day (with overnight stay) \$5.00

Mileage Rates	Current
Premium Rate	\$0.655 per mile
Standard Rate	\$0.440 per mile

* See Select Cities Listing

** Lodging available at State rate, or call Conlin Travel at 877-654-2179 or www.somtravel.com

SELECT CITY LIST
SCHEDULE OF TRAVEL RATES FOR CLASSIFIED AND UNCLASSIFIED EMPLOYEES
Effective January 1, 2023

Michigan Select Cities/Counties		
	CITIES	COUNTIES
	Ann Arbor, Auburn Hills, Beaver Island, Detroit, Grand Rapids, Holland, Leland, Mackinac Island, Petoskey, Pontiac, South Haven, Traverse City	Grand Traverse, Oakland, Wayne
Out of State Select Cities/Counties		
STATE	CITIES	COUNTIES
Alaska	All locations	
Arizona	Phoenix, Scottsdale, Sedona	
California	Arcata, Edwards AFB, Eureka, Los Angeles, Mammoth Lakes, McKinleyville, Mill Valley, Monterey, Novato, Palm Springs, San Diego, San Francisco, San Rafael, Santa Barbara, Santa Monica, South Lake Tahoe, Truckee, Yosemite National Park	Los Angeles, Mendocino, Orange, Ventura
Colorado	Aspen, Breckenridge, Grand Lake, Silverthorne, Steamboat Springs, Telluride, Vail	
Connecticut	Bridgeport, Danbury	
District of Columbia	Washington DC (See also Maryland & Virginia)	
Florida	Boca Raton, Delray Beach, Fort Lauderdale, Jupiter, Key West, Miami	
Georgia	Brunswick, Jekyll Island	
Hawaii	All locations	
Idaho	Ketchum, Sun Valley	
Illinois	Chicago	Cook, Lake
Kentucky	Kenton	
Louisiana	New Orleans	
Maine	Bar Harbor, Kennebunk, Kittery, Rockport, Sandford	
Maryland	Baltimore City, Ocean City	Montgomery, Prince George
Massachusetts	Boston, Burlington, Cambridge, Martha's Vineyard, Woburn	Suffolk
Minnesota	Duluth, Minneapolis, St. Paul	Hennepin, Ramsey
Nevada	Las Vegas	
New Mexico	Santa Fe	
New York	Bronx, Brooklyn, Lake Placid, Manhattan, Melville, New Rochelle, Queens, Riverhead, Ronkonkoma, Staten Island, Tarrytown, White Plains	Suffolk
Ohio	Cincinnati	
Pennsylvania	Pittsburgh	Bucks
Puerto Rico	All locations	
Rhode Island	Bristol, Jamestown, Middletown, Newport, Providence	Newport
Texas	Austin, Dallas, Houston, L.B. Johnson Space Center	
Utah	Park City	Summit
Vermont	Manchester, Montpelier, Stowe	Lamoille
Virginia	Alexandria, Fairfax, Falls Church	Arlington, Fairfax
Washington	Port Angeles, Port Townsend, Seattle	
Wyoming	Jackson, Pinedale	

APPENDIX 5

CERTIFICATES OF INSURANCE



ENVIRES-01

ELEWIS

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/23/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER General Agency Company 525 E. Broadway Mount Pleasant, MI 48858	CONTACT NAME: Carmen France	
	PHONE (A/C, No, Ext): (989) 817-4231	FAX (A/C, No): (989) 772-1855
	E-MAIL ADDRESS: cfrance@ga-ins.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Crum & Forster Specialty Insurance	31348
INSURED Environmental Resources Group LLC 28003 Center Oaks Ct #106 Wixom, MI 48393	INSURER B : Union Insurance Company of Providence	21423
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	X		ECG106678	9/1/2022	9/1/2023	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	X		6E37174	9/1/2022	9/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$			EFX121003	9/1/2022	9/1/2023	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	X	6H37174	9/1/2022	9/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Errors & Omissions	X		EEO105467	9/1/2022	9/1/2023	Occ/Aggregate \$ 5,000,000
A	Contractor Pollution	X		CPL114409	9/1/2022	9/1/2023	\$1,000,000 each loss \$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
General Liability, Contractors Pollution Liability, and Auto Liability have automatic additional insured endorsements that includes the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents when required by a contract. General Liability, Contractors Pollution Liability, Professional Liability, and Auto Liability include primary and non-contributory endorsements when required by written contract. Workers Compensation includes waiver of subrogation. Excess Liability follows form according to the terms, conditions, and endorsements found in the policy. 30-day notice of cancellation is provided to certificate holder, except for 10-day notice for non-payment of premium.

CERTIFICATE HOLDER

CANCELLATION

State of Michigan, Design & Construction Division
3111 W St Joseph St
Lansing, MI 48917

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE