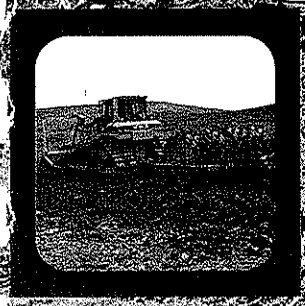
Expression of Interest

to Provide Environmental Services for City of Clarksburg Landfill Closure Project

A Terracon COMPANY



Presented to
West Virginia Dept of Environmental Protection
Office of Waste Management
601 57th Street SE
Charleston, West Virginia
August 12, 2009

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WV PURCHASING
DIVISION

H.C. Nutting, A Terracon Company 921 Morris Street Charleston, WV 25301
P [304] 344 0821 F [304] 342 4711 terracon.com

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

EXPRESSION OF INTEREST
CITY OF CLARKSBURG LANDFILL CLOSURE PROJECT
CLARKSBURG, WEST VIRGINIA

INTRODUCTION

H. C. Nutting, a Terracon Company (HCN) is providing this Expression of Interest (EOI) to present our experience and qualifications for the City of Clarksburg Landfill Closure Project. Work for the project will include the following components:

1. Site characterization study,
2. Engineering design for leachate management and closure cap,
3. Closure plan and construction specification document preparation, and
4. Construction quality assurance / quality control (QA/QC) activities.

In 2008, HCN completed studies on two closed landfills to determine the environmental site setting, landfill boundaries, waste characterizations, and proposed action plans for either waste removal or improved landfill closure. HCN also completed construction QA/QC activities at five landfill sites. These projects, along with the 30 to 40 years of landfill experience of our environmental/landfill staff, provide the qualifications to successfully complete the proposed project. This EOI presents the following information:

- Company history,
- HCN's approach to completing the necessary work,
- Consultant Qualification Questionnaire (Attachment 1),
- Conceptual Work Plan (Attachment 2),
- Solid Waste Services (Attachment 3)
- Project Summaries (Attachment 4), and
- Personnel Resumes (Attachment 5).

COMPANY HISTORY

HCN is a multi-disciplinary engineering firm with expertise in geotechnical, environmental, mining, geologic, hydrogeologic, and materials engineering. Because of the variety of services we provide, we serve an average of 1,800 assignments annually. Since 1921, HCN has served approximately 20,000 local, regional and national clients including Architects, Consulting Firms, Manufacturing Firms, Oil Companies, Developers, Contractors, Attorneys, Financial Institutions, Public Utilities and Governmental Agencies. The company's landfill-related work dates back to

the 1970s. The Charleston, West Virginia office is supported by other regional offices in Cincinnati and Columbus, Ohio; and Lexington, Kentucky providing approximately 180 professional and graduate engineers, geologists, hydrogeologists, scientists, technicians and support personnel.

In January 2007, HCN joined Terracon, one of the nation's largest employee-owned engineering consulting firms providing geotechnical, environmental, construction materials engineering and testing, and facilities services with over 3,000 employees and 100 offices nationwide. Several of these offices provide significant solid waste/landfill services on a state to national basis from privately-owned to local government-owned facilities.

PROJECT SCOPE

As mentioned in the Introduction, the work for the project will include the following components:

1. Site characterization study,
2. Engineering design for leachate management and closure cap,
3. Closure plan and construction specification document preparation, and
4. Construction quality assurance / quality control (QA/QC) activities.

HCN will take a phased approach in completing this work dividing the project into milestone tasks. The first action, site characterization study, is further divided into subtasks to develop a current assessment of the landfill site. As described in more detail in the Conceptual Scope of Work attached behind Tab 2, the site characterization study will include a Field Exploration phase, an Environmental Monitoring phase, and a Site Assessment phase providing a step by step progression to establish an understanding of the landfill project.

Based on this information, the engineering design task can begin. This task will also have a series of tasks that step the design process through conceptual, preliminary, and final design phases of the site improvements to achieve a cost effective and viable closure. Once the final design is completed and approved, the engineering plans can get upgraded to construction detail level along with construction specifications, quality assurance plan, and bidding documents.

During the construction phase, HCN will maintain full-time QA/QC representation to monitor, inspect, test, and certify the environmental improvements needed to complete site closure. A construction record report completes the construction activities; however, there is a need to have continued site maintenance and long-term care of the site after closure. A Post-Closure Care plan will provide direction for the responsible parties to continue site environmental monitoring, operate and maintain any active environmental controls (i.e. leachate pumping

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
LANDFILL CLOSURE CONSULTANT QUALIFICATION QUESTIONAIRE

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
City of Clarksburg Landfill Closure Project	**August 12, 2009**	

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
H. C. Nutting, A Terracon Company	**912 Morris Street, Charleston, WV 25301**	

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6A. WV REGISTERED DBE (DISAVANTAGED BUSINESS ENTERPRISE)
513-321-5816	**1921**	INDIVIDUAL, **CORPORATION**, PARTNERSHIP, JOINT-VENTURE	YES **NO**

7. PRIMARY OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. (name particular type) PERSONNEL EACH OFFICE

912 Morris Street, Charleston, WV 25301 / 304.344.0821 / John Blair / 32
611 Lunken Park Drive, Cincinnati, OH 45226 / 513.321.5816 / Jess A. Schroeder / 130
790 Morrison Road, Columbus, OH 43230 / 614.863.4399 / Prasad Rege / 34
470-B Conway Court, Suite B-8 / Lexington, KY 40511 / 859.455.8530 / Will Beckwith / 8
1414 East Schaaf Road / Brooklyn Heights, OH 44131 / 216.459.8378 / Tom McDonnell / 16

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER-OTHER PRINCIPALS
R. Jackson Scott, Sr. Vice President	**Jess A. Schroeder, Sr. Principal**
James P. Cahill, Vice President	**John Blair, Principal**

9. NUMBER OF PERSONNEL BY DISPLINE **(Bold Lettering Indicates Minimum Design Team Members) Detailed information On Team To Be Included**

40	**ADMINISTRATIVE**	___	ECOLOGISTS	___	LANDSCAPE ARCHITECTS	___	STRUCTURAL ENGINEERS
___	ARCHITECTS	___	ECONOMISTS	___	MECHANICAL ENGINEERS	___	**SURVEYORS**
___	**BIOLOGIST**	___	ELECTRICAL ENGINEERS	1	MINING ENGINEERS	52	OTHER
2	**CADD OPERATORS**	___	ENVIRONMENTALISTS	___	PHOTOGRAMMETRISTS		
___	CHEMICAL ENGINEER	1	**ESTIMATORS**	___	PLANNERS: URBAN/REGIONAL	220	TOTAL PERSONNEL
8	**CIVIL ENGINEERS**	8	**GEOLOGIST**	___	SANITARY ENGINEERS		
60	**CONSTRUCTION INSPECTORS**	___	HISTORIANS	40	**SOILS ENGINEERS**		
4	**DESIGNERS**	2	**HYDROLOGISTS**	1	SPECIFICATION WRITERS		
1	DRAFTSMEN						

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 13

***RPEs other than Civil must provide supporting documentation that qualifies them to supervise and perform this type of work.**

10. If submittal is by joint venture, list participating firms & outline specific areas of responsibility (including administrative, technical, & financial) for each firm. Each participating firm must complete a "Consultant Confidential Qualification Questionnaire" **N/A**.

10a. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? YES NO

12. ***Note: Personnel refers to those who will be working directly on the project:

A. Are your firm's personnel experienced in Solid Waste Landfill Closure Design?

YES Description and Number of Projects:

Our staff has worked on landfill projects dating back to the early 1980s. These projects include engineering on approximately 40 landfill closure or closed landfill projects. Most recently, our staff has performed engineering related services on six (6) landfill closure situations.

NO

B. Are your firm's personnel experienced in Solid Waste landfill site characterization assessment and evaluation?

YES Description and Number of Projects:

As noted above, our staff has worked on landfill projects dating back to the early 1980s. These projects include engineering on approximately 50 landfills or waste disposal facilities requiring site characterization assessments. Most recently, our staff has performed site characterization related services on three (3) landfill/waste disposal situations.

NO

C. Are your firm's personnel experienced in landfill closure construction inspection?

YES Description and Number of Projects:

HCN personnel have been involved in landfill closure inspections since the early 1990s through out the United States. It is estimated they have been involved in over 20 landfill closure construction inspection projects; plus over 75 landfill cell construction projects.

NO

D. Is your firm experienced in Aerial Photography and the Development of Contour Mapping?

YES Description and Number of Projects:

HCN does not perform this work, however, our personnel have worked with clients and surveying firms to develop aerial photography topographic contour site maps as well have worked with surveying firms to develop contour mapping using ground survey methods.

NO.

E. Are your firm's personnel experienced in evaluating ground water contamination, such as may be associated with landfills?

YES Description and Number of Projects:

The HCN personnel have been involved in evaluating ground water contamination of landfills and waste disposal locations for twenty years. They have been involved in an estimated 25 landfill, waste impoundment, and unlicensed disposal locations.

NO

F. Are your firm's personnel experienced in Landfill Closure cost estimating?

YES Description and Number of Projects:

As part of our landfill and civil design related services, we are required to complete cost estimating with respect to design alternatives and final design engineer's estimates. This includes completing estimates for landfill closure. It is estimated that we have completed approximately 10 cost estimates for landfill closure related work in the past five years.

NO

13. PERSONAL HISTORY STATMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN** (Furnish Complete data but keep to essentials)			
NAME& TITLE (Last, first, Middle Int.) **Ebelhar, Ronald J.** **Sr. Principal / Sr. Project Geotechnical Engineer**	YEARS OR EXPERIENCE		
	YEARS OF EXPERIENCE: **Geotechnical Analysis** **33**	YEARS OF EXPERIENCE: **Landfill Design** **22**	YEARS OF EXPERIENCE: **Landfill CQA** **20**
Brief Explanation of Responsibilities: **Principal-in-Charge, Project Management, Geotechnical / Seismic Analyses, Peer Review, Construction Quality Assurance**			
EDUCATION (DEGREE, YEAR, SPECIALIZATION) **BSCE/1975/Civil Engineering, MSCE/1976/Civil Engineering**			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS: **American Society of Civil Engineers, ASTM International, Society of American Military Engineers, International Society of Soils Mechanics and Foundation Engineers**	REGISTRATION (Type, Year, State) **PE, 1988, West Virginia** **PE, 1991, Pennsylvania** **PE, 1987, Kentucky** **PE, 1999, Illinois** **PE, 1987, Ohio** **PE, 1980, Texas** **PE, 1988, Indiana** **PE, 1991, Utah**		

13a.PERSONAL HISTORY STATMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (name type of design or work)** (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) **Rome, Bruce E.** **Principal / Sr. Project Environmental Engineer**	YEARS OF EXPERIENCE		
	YEARS OF EXPERIENCE: **Landfill Design and Permitting** **35**	YEARS OF EXPERIENCE: **Landfill CQA** **25**	YEARS OF EXPERIENCE: **Bidding Documents, Construction Plans & Specifications** **25**
Brief Explanation of Responsibilities: **Manages the site characterization tasks overseeing the work of geologist and hydrogeologists, performs and directs the landfill design work, works with AutoCAD personnel in preparing drawings, performs drainage analyses, assembles permitting documents, writes specification documents, assembles bidding documents, participates in pre-bid and pre-construction meetings, reviews shop drawings and material submittals, oversees landfill construction quality assurance, manages project budgets and schedules.**			
EDUCATION (Degree, Year, Specialization) **BSCEE/1979/Civil and Environmental Engineering**			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS **American Society of Civil Engineers** **Solid Waste Association of North America**	REGISTRATION (Type, Year, State) **PE, 1982, Wisconsin** **PE, 1991, Indiana** **PE, 1995, Kentucky** **PE, 1988, Ohio** **PE, 1988, Michigan**		

13b. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE QA/QC** (Furnish complete data but keep to essentials)			
NAME & TITLE (last, first, middle Int.) **Rome, Bruce E.**	YEARS OF EXPEIRENCE		
	YEARS OF EXPERIENCE (name type):	YEARS OF EXPEIRENCE (name type):	YEARS OR EXPEIRENCE (name type):
Brief Explanation of Responsibilities:			
EDUCATION (Degree, Year, Specialization)			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

13c. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR HEAVY EARTH WORK CONSTRUCTION PROJECTS** (Furnish complete data but keep to essentials)			
NAME & TITLE (last, first, middle Int.) **Ebelhar, Ronald J.**	YEARS OF EXPERIENCE		
	YEARS OF EXPERIENCE (name type)	YEARS OF EXPERIENCE (name type)	YEARS OF EXPERIENCE (name type)
Brief Explanation of Responsibilities			
EDUCATION (Degree, Year, Specialization)			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE THIS PROJECT (name project)
Auto CAD 2007
Microstation Version 8
Microsoft Office Suite (Word, Excel, Access, PowerPoint, Publisher)
Haestad Methods - PondPack™ for storm water drainage analysis as needed
STABL and ReSLOPE for slope stability analysis
Shake2000 – Seismic Site Response Analyses
Plaxis – Finite Element Analysis software
AutoCAD Workstations (4)
Desktop Computers (84)
Laptop Computers (19)
Laser Printers (31)
Plotters – HP750C (1)

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD ASSOCIATED WITH OR RELATING TO LANDFILL CLOSURE OR CONSTRUCTION.				
PROJECT NAME,TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Historic Waste Disposal Area Characterization and Removal John E. Amos Power Plant Winfield, WV	American Electric Power 700 Morrison Road Gahanna, Ohio 43230 Attn: Tommy Antil	Investigate an old fill area located on power plant property Prepared Site Assessment Report	Investigation Study $95,000 $2,000,000	Investigation Study 100% Complete Construction pending
Historic Waste Area Investigation Village of Milan, Ohio	Village of Milan 11 South Main St P.O. Box 1450 Milan, Ohio 44846 Bruce A. Bowie, City Manager	Investigate an old fill area located adjacent to a farm field. Prepared Site Assessment Report	Investigation Study $55,400 No construction cost developed at this time	Investigation Study 95% Complete Waiting for agency review.
Drainage Improvements Seneca East Landfill Republic, Seneca County, Ohio	Waste Management Closed Sites Group 4010 Powell Road Dayton, Ohio 45424 Robin Jones	Address increase in leachate generation by improving surface water drainage off landfill site. Prepare permit and construction documents	Design, Construction Plans, and CQA $25,000 Construction Estimate $100,000	Design 100% Complete Construction 0% (pending Ohio EPA approval)
Ottawa River Bank Stabilization Seriff Road Landfill Lima, Ohio	Waste Management Closed Sites Group 4010 Powell Road Dayton, Ohio 45424 Robin Jones	Design bank stabilization to protect old waste fill at the existing landfill. Prepared design plans, permits, and performed CQA.	Design, Permitting, Construction, CQA, and Post-Construction Monitoring $55,000 Construction $200,000	Project 100% Complete Post Construction Monitoring 20% Complete
North Site Compost Facility Amberley Village, Ohio	Amberley Village 7149 Ridge Road Amberley Village, Ohio 45237 Bernard Boraten, City Manager	Prepare construction plans, bidding documents, and permits for compost waste excavation to restore area to clean site condition Perform CQA Post Construction Monitoring	Engineering Fees through CQA $50,000 Construction fees $600,000 Monitoring $7,000	Project 100% Complete through construction Monitoring 40% complete
ELDA Landfill Leachate System and Cap Improvements Cincinnati, Ohio	Waste Management Closed Sites Group 5751 Center Hill Avenue Cincinnati, Ohio 45232 Robin Jones	Prepare permit application for site work, storm water analysis, cap repair plans.	Engineering Fees $5,500	Project pending, 2010 construction, currently in design stage
TOTAL NUMBER OF PROJECTS: Six (6)			TOTAL ESTIMATED CONSTRUCTION COSTS: $ 2,900,000	

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS RELATING TO LANDFILL CLOSURE AND CONSTRUCTION.					
PROJECT NAME, TYPE, AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST:	
None				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY

18. COMPLETED WORK WITHIN LAST 5 YEARS IN WHICH YOUR FIRM HAS BEEN A SUBCONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK WHICH YOUR FIRM WAS RESPONSIBLE) LIST 5 TO 7.					
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
NONE					

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the WV Department of Environmental Protection.

H.C. Nutting maintains a complete drilling department with truck-mounted and all-terrain auger drilling rigs for soil boring and monitoring well installations. We also have a full-service material testing laboratory for soil and construction material testing. HCN has performed multiple geotechnical analyses for landfills including a seismic design study for a landfill in Western Kentucky and our staff was involved in the development of geotechnical design standards for the State of Ohio. Our staff has completed design and construction plans for licensed and unlicensed waste disposal landfills/areas including Superfund Sites that were under the review of the U.S. EPA.

20. The foregoing is a statement of facts

Signature: Ronald J Ebelhar

Title: SENIOR PRINCIPAL

Printed Name: Ronald J. Ebelhar

Date: 8/6/09

RFQ No. DEP14706

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:
West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:
If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the ***West Virginia Code***. The vendor **must** make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the ***West Virginia Code*** and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the ***West Virginia Code*** may take place before their work on the public improvement is begun.

ANTITRUST:
In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:
Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:
The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: H.C. Nutting, A Terracon Company

Authorized Signature: Ronald J. Eberle Date: 8/6/09

H. C. NUTTING

A Terracon COMPANY

ATTACHMENT 2

CONCEPTUAL WORK PLAN

CONCEPTUAL WORK PLAN
CITY OF CLARKSBURG, WV LANDFILL CLOSURE

HCN proposes to approach the City of Clarksburg Landfill Closure Project in seven task steps as described below:

1. Project Startup
2. Field Exploration
3. Environmental Monitoring
4. Data Assessment and Conceptual Engineering
5. Engineering Design
6. Construction Documents
7. Construction QA/QC and Oversight

PROJECT STARTUP

Start of the project will involve file reviews and site reconnaissance to gather data for specific planning of the field exploration and design task. The file review will look for information regarding past filling practices, construction activities, environmental (groundwater) monitoring, correspondence, etc. Some site preparation work may be required, such as clearing brush for access to complete the field work.

FIELD EXPLORATION

The field exploration task will first consist of a geophysical survey using electromagnetic (EM) terrain conductivity mapping. This will be followed by test pit excavation. A topographic survey of the waste disposal area will complete the field work. Before this field exploration work begins, an Environmental, Health and Safety Plan (HASP) and Field Exploration Work Plan will be prepared to guide the field crews. These Plans will be completed in-house by the HCN Industrial Hygiene staff.

Geophysical Exploration

The geophysical exploration survey will use electromagnetic (EM) terrain conductivity mapping to delineate the lateral extent of filling. This survey will help to characterize the fill, and locate various buried targets. This step is desirable to start with as it is non-invasive and can cover a

large area in a short period of time. This work will be performed by a subcontractor and it may take one day to cover the landfill area.

Potential limitations with regard to the performance of the EM survey include: 1) fences, vehicles, building walls, electronic transmission lines, railroad tracks, reinforced pavement and other nearby conductive metallic objects that may interfere with the EM measurements and limit or preclude interpretation of the data in the vicinity of these features; 2) densely overgrown, wooded areas may be difficult to survey; and 3) the detection or extent of buried man-made targets and waste fill depends on the presence of a detectable contrast in bulk electrical properties between the targets or conditions of interest and the surrounding undisturbed or native soil.

Test Pit Exploration

After we receive the results of the EM survey, we will perform test pit excavations to further delineate the limits of waste and to verify the cover soil texture and thickness. The EM survey should help to delineate specific locations where a test pit should be excavated. We plan to dig test pits on an approximate spacing of 50 to 100 feet along the limits of the disposal areas as well as some test pits in the interior of the landfill to check existing cover depth.

The test pits will be documented on a test pit log along with depths and soil type. No samples of the waste or soil will be collected. Photographs of the test pits will be taken to document the encountered waste materials. All field personnel will use, at a minimum, Level D personal protection (PPE). Test pit exploration work will not occur during precipitation events where storm water runoff could occur.

The excavated material will be placed back into the test pit in a controlled manner and the cover soil replaced.

At the completion of the test pit excavations, the backhoe bucket will be cleaned with brushes.

Topographic Survey

For purposes of illustrating the configuration of the landfill, a topographic survey will be completed the end of field exploration work. This survey effort will define the shape of the landfill topography, locate the test pits, and locate the identified limits of waste. This survey data will then be used to generate a site map that will be included used the Site Assessment Report and for the Engineering Design.

Health and Safety Measures

We will conduct daily Job Hazard Analysis meetings every morning before starting work. A meeting log will be completed.

ENVIRONMENTAL MONITORING

Once the limits of the waste disposal areas are known, the environmental monitoring phase will begin. This phase involves assessing the surrounding environment for impacts from the waste through monitoring groundwater quality and explosive gas production.

Groundwater Monitoring

For groundwater monitoring, soil borings and groundwater monitoring wells will be completed around the waste disposal area in a phased sequence. The soil borings will define the geologic and hydrogeologic conditions. This will provide information to aid installing groundwater monitoring wells around the waste disposal area. The intention is to have one well to serve as an upgradient well for background water quality and have down-gradient wells for detection of leaching contaminates from the waste area. The goal is to compare the down-gradient groundwater quality to the upgradient groundwater quality. Wells will be set into the uppermost aquifer, which could be within the waste itself.

Soil borings will be drilled using an all-terrain-mounted auger drilling rig. Split-spoon sampling will be performed and the soil profile will be logged as the drilling progresses. The temporarily-cased boreholes may be left open for 24-hours to check for water levels; this will help with decision on installing monitoring wells. The bore hole may be instrumented for groundwater monitoring or it may be backfilled with the drill cuttings after the 24-hour water level measurement is taken.

The collected soil samples will be taken to our Charleston Office Geotechnical Laboratory for classification and testing. Some soil characterization testing may be performed on selected samples to aid classification. Soil testing may include moisture content, liquid limit, and plastic limit. A final soil boring log will be prepared for inclusion into a Site Assessment Report.

Installing groundwater monitoring wells will involve a review of the soil boring information. Since this needs to be completed while the drilling rigs are onsite, a geologist or qualified professional may be present during drilling to monitor and record the soil boring data. The wells will consist of a 2-inch-diameter PVC well screen and riser pipe. The well screen will be 10-ft-long with the annular space around the well screen backfilled with sand. Above the well screen, the well pipe will be backfilled with soil and a bentonite seal. There will be a 2- to 3-ft stickup of the well pipe above ground surface. The well pipe will be protected with a steel casing and lock.

The location and elevation of the soil borings and monitoring wells will be recorded by a surveyor for presentation on a final site drawing.

Once the wells are installed, the groundwater monitoring program may begin. The program involves measuring groundwater levels to define groundwater flow direction, purging the wells to remove any residual sediment from the well as result of the installation, groundwater sampling, analytical laboratory analysis, and review of the results. If the upper geologic formation consists of low permeability soil that yield very little water, it may require several trips to purge the wells and collect groundwater samples. Groundwater samples will be collected and shipped to an analytical laboratory for analysis. The testing will follow the West Virginia DEP regulations and will include the following possible list of parameters.

Alkalinity	Calcium	Conductivity	Magnesium	Sodium	Turbidity
Aluminum*	Chloride	Copper	Manganese	Sulfate	Vanadium
Arsenic*	Chromium	Iron	Nickel	TDS	Zinc
Barium	Cobalt	Lead	Nitrate-Nitrite	Temperature	

Landfill Gas Monitoring

The presence of explosive landfill gas will be checked around and with in the landfill with the installation of gas monitoring probes. This requires installing gas monitoring probes adjacent to the waste limits to detect for the presence of landfill gases. The soil borings completed for the groundwater monitoring wells will aid the decision making for installing the gas monitoring probes with respect to migration pathways. The gas probes should go to the same depth as the deposited waste. Since this may not be known, we suggest doing one boring into the waste (trash) deposit area to check for waste depth. This will also give us an opportunity to check explosive gas production in the waste itself.

The gas monitoring probes will consist of a 2-inch-diameter (nominal) polyvinyl chloride (PVC) riser pipe with a 10-foot-long well-screen section. The well-screen section will be backfilled with sand. Bentonite mixed with compacted clay will be placed around the pipe from the sand to ground surface. The riser pipe will be extended above the ground surface by about 3 feet with a friction-fit cap to cover the riser pipe. The gas probe assembly will be secured inside of a steel protective outer casing, equipped with a padlock.

Landfill gas monitoring may be combined with the groundwater monitoring wells that are screened above and below the water table.

DATA ASSESSMENT AND CONCEPTUAL ENGINEERING

The data assessment task will bring together the field data collected for characterizing the will be presented in a Site Assessment Report. This report will describe the field exploration efforts including the geophysical survey, test pit excavations, groundwater monitoring wells, gas probes, and monitoring data. The topographic survey drawing will support the field data with illustration of the identified waste boundary and location of the test pits, wells and probes. Geologic cross sections through the waste area may be included to illustrate the relationship of the waste to the geologic formation and groundwater flow. The encountered waste characteristics will be described. Supporting the narrative will be appendix data to include reports on the geophysical survey, test pit logs, boring logs, monitoring results and analytical laboratory test results.

Having an understanding of the site conditions, conceptual engineering will begin the process of establishing environmental site improvements to properly close the landfill. Concepts could include the following:

- site grading to promote surface water drainage,
- surface water drainage channels and sediment basin(s),
- landfill gas control measures,
- additional groundwater monitoring controls,
- leachate collection and treatment measures, and
- final cover system.

The conceptual engineering report will likely consist of a set of drawings showing grading and environmental improvement plan concepts along with details. A brief narrative will describe the improvements. The conceptual design will consider options for the improvements and engineering cost estimates for implementation to aide the decision of how best to achieve the project objectives.

The Site Assessment Report and Conceptual Engineering Design will then be submitted to the WV DEP for review. The conceptual design will be a 30% submittal for review and comment. A meeting to discuss the site assessment and 30% submittal is desired to explain the work completed and to hear initial comments on the conceptual design. This meeting to discuss the results and proposed environmental improvements will then put the project into the detail engineering design phase.

ENGINEERING DESIGN

HCN understands that a landfill closure design must include close interaction with WV DEP's staff that will be considering the future management, operation, and construction at the landfill. We want to make sure they are a part of the design team and that their concerns, facility understanding, and knowledge are incorporated into the design. A phased approach provides the opportunity to present the plans and engineered concepts and to get feedback during the design process. The engineering design will continue in two task steps as described below:

1. Design, Analysis, and Drawings (70% Submittal)
2. Final Design (90% and 100% Submittals)

Design, Analysis, and Drawings (70% Submittal)

Task 1 takes the conceptual design toward a final design by refining the final grades and the proposed site improvements along with completing design calculations. The expected design calculation includes geotechnical analysis for slope stability, storm water drainage, soil erosion per the Universal Soil Lose Equation, sediment pond design, leachate generation (HELP Model), and earthwork estimates. The task includes the start of drawings for the site closure. Potentially the following drawings would be prepared, which are focused on Storage Area 1A, will present the landfill redesign for the permit modification:

1. **Existing Site Topography** – showings pre-construction site conditions
2. **Leachate System** – as necessary, this drawing will detail leachate collection system features with reference to construction details.
3. **Final Cover Subbase Grades** – shows proposed regrading of the site for improved surface water drainage.
4. **Final Grades** – takes the Subbase Grades drawing and raises the grades to show top of the placed final cover layer.
5. **Surface Water Drainage** – using the Final Grades drawing illustrate and label surface water drainage features planned for the closure including sediment control measures.
6. **Landfill Gas Control Measures** – as necessary, this drawing will detail gas control measures with reference to construction details.
7. **Cross Sections** – sections will illustrated the existing landfill topography, leachate collection system features, final cover subbase grade, final grade, and surface water drainage improvements.
8. **Details** – as necessary, construction details will illustrate various environmental improvement features such as final cover layer, leachate collection system, gas control measures, etc.

The 70% submittal will be this series of drawings and design calculations. A letter report will explain the analysis completed and include calculations as an appendix.

Final Design (90% and 100% Submittals)

The final design effort with 90% and 100% submittals will be adding notes and support information to the drawings, writing up a formal report for submittal, and refining and finalizing calculations.

This step includes HCN senior staff's final review of the landfill closure design work effort. Also completed during this task will be construction quality assurance and control work plan for use during the construction process.

Post-closure long-term care of the closed landfill will be addressed in a Post-Closure Care Plan document that will describe site inspections, environmental monitoring, maintenance procedures, and contingency action plans if problems are found.

CONSTRUCTION DOCUMENTS

To move the landfill closure process into the construction phase involves taking the Engineering Design drawings and incorporating information to facility the construction effort. This will mainly consist of adding construction layout information to the grading drawings. The layout information is will consist of certification point data at 50-ft to 100-ft spacing intervals and at key grade changes. The point data will have point number, grid coordinates, and elevation. For cover system, the point data is developed for each layer of the cover system.

Along with drawings, the construction documents will consist of a construction manual that has construction specifications for the closure components. The specifications cover specific construction items providing general information, material details, and execution for construction installation. The specification will cover earthwork, drainage, piping, cover soils, topsoil, seeding, etc. Included in the construction manual will be the construction QA/QC Plan.

To facilitate the bidding process, a bid package is assembled that includes bidding instructions, bid form, and construction contract language. Contract language should consist of WV DEP contract materials including general conditions and wage rate requirements. The bidding process will include holding pre-bid meetings at the site and submittal of addenda as the bidding process occurs. After the close of bidding, the bids will be reviewed and recommendation made for selection of the contractor.

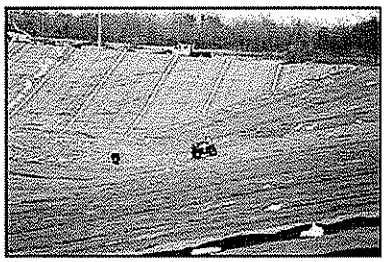
CONSTRUCTION QA/QC AND OVERSITE

Once the construction project gets started, construction QA/QC will require having a full-time onsite representative to monitor, test, inspect and record the construction effort. This can involve one to two specifically trained technicians and engineers to complete the QA/QC task. Further oversight is performed by engineer review of "shop drawing" submittals and approval of construction materials. As construction proceeds, the engineer will also participate in site visits, construction progress meetings, review of payment requests, and communication with the WV DEP representative. At the completion of the construction, a Construction Record document will be assembled that provides confirmation of the construction to design requirements. At the completion of the construction effort, the post-closure long-term care process will begin.

ATTACHMENT 3

SOLID WASTE SERVICES

Solid Waste Services



Terracon performed oversight of the City of Cheyenne, Wyoming landfill construction activities. Technicians were on site full-time during the three-month construction period. The landfill cell was 11 acres in size and was constructed in accordance with RCRA Subtitle D Standards.

It is inevitable that we will always produce and dispose of solid waste. However, more stringent regulations and increased public scrutiny have made locating and designing new solid waste facilities and all aspects of solid waste management quite challenging.

Terracon can help provide a solution to your solid waste management needs. Built upon 40 years of success and teamwork, Terracon offers a full array of consulting engineering services to municipalities, counties and private entities involved in solid waste management. Our local expertise, paired with our national network of offices, can provide you with innovative and cost-effective solutions to meet all of your solid waste management needs.

Terracon is unique in our landfill capabilities. Not only can we provide registered professionals to design the landfill, we can also provide geotechnical engineering, hydrogeologic, construction quality assurance, and construction materials testing services. As a result, we are able to assist clients through all phases of landfill development and continued operation.

The following Solid Waste Management Services are provided by experienced Terracon staff. These services are discussed in more detail in the following sections.

Solid Waste Related Permitting

- Subtitle D Solid Waste Landfills
- Solid Waste Transfer Stations
- Yard Waste Compost Facilities
- Clean Air Act (NSPS, Title V)
- NPDES Permits
- Stormwater
- Wetlands
- Subtitle C Hazardous Waste Landfills
- Wastewater
- RCRA Part B Permits

Solid Waste Geologic and Hydrogeologic Studies

- Groundwater Monitoring System Design and Installation
- Groundwater Recovery System Design and Installation
- Site Hydrogeologic Investigations
- Site Characterizations
- Borehole and Surface Geophysical Analysis
- Aquifer Testing
- Groundwater Modeling
- Extent of Contamination Studies
- Structural and Geotechnical Studies
- Geologic Evaluation of Properties

Solid Waste Facility Design and Engineering

- Landfill Feasibility Analysis
- Geotechnical Analysis and Foundation Design
- Earth Retaining Structures
- Flood Analysis and Map Revisions through FEMA
- Hydrology Studies
- Hazard Potential and Risk Assessments
- Solid Waste Landfills
- Solid Waste Transfer Stations
- Yard Waste Compost Facilities
- Surface Water Impoundments
- Stormwater Pre-treatment Facilities
- Hydraulic and Hydrologic Systems
- Site Layout for Building Construction
- Landfill Closure and Redevelopment
- Landfill Gas Collection Systems
- Seismic Impact Analysis
- Slope Stability Analysis
- Flood Modeling and Analysis

Construction Monitoring

- Construction Quality Assurance
- Liner Installation Certification
- Landfill Closure Certifications
- Building Site Preparation
- Engineered Embankments

Solid Waste Sampling and Monitoring

- Ground Sampling, Monitoring, and Statistical Analysis
- Groundwater Sampling and Analysis Plans
- Groundwater Statistics and Contingency Plans
- Groundwater Alternate Source Demonstrations
- Explosive Gas Monitoring and Reporting
- NSPS Surface Monitoring and Reporting
- NPDES and Surface Water Monitoring/Reporting
- Waste Stream Profiling
- Soil Sampling/Construction Materials Testing

Solid Waste Compliance and Related Studies

- Storm Water Pollution Prevention Plans
- Emergency Action Plans
- Spill Prevention, Control, and Countermeasures Plans
- Hazardous Waste Exclusion Plans
- Emergency Response Plans
- Permanent Operating Record System Development
- Compliance Record Database Establishment and Management
- Location Restriction Demonstrations
- Remedial Action Plans
- Solid Waste Management Plans
- Closure and Post Closure Plans
- RCRA Facility Investigations
- Compliance Audits
- Site Remediation
- Environmental Site Assessments

Wetlands and Other Ecological Services

- Wetlands Delineation and Mapping
- Wetland Mitigation Design and Monitoring
- Biological Assessments
- Endangered Species Recovery Plans
- Protection and Mitigation Plans
- Water Quality Investigations
- Aquatic and Terrestrial Ecological Assessments
- Fresh Water Benthic Macroinvertebrates Studies
- Aquatic Toxicology
- Microbiological Studies
- Permit Compliance Negotiation

Operations and Maintenance

- Wastewater Treatment Plants
- Landfill Operation and Compliance Assistance
- Groundwater Extraction Systems
- French Drain Systems
- Site Beautification

Solid Waste Related Air Permitting

- Air Emissions Inventories and Compliance Audits
- State Implementation Plan Air Permits and Air Pollution Prevention Plans
- Title V Permit Applications
- Municipal Solid Waste Air Regulatory Compliance
- Landfill Explosive Gas Monitoring
- Municipal Solid Waste NSPS
- Initial Design Capacity Reports and Applicability Determinations
- Non-Methane Organic Compound Tier II Evaluations and Modeling
- Landfill Gas Collection System Design

Solid Waste Management Planning

- Preparation of Solid Waste Management Plans
- Landfill Tipping Fee Analysis
- Solid Waste Facility Cost Analysis

Hydrogeological Services

- Groundwater Monitoring
- Complete Site/Aquifer Characterization for Landfill Permitting
- Groundwater Computer Modeling
- Groundwater Remedial System Design
- Contaminant Fate and Transport Modeling
- Risk Assessments
- Regulatory Negotiations and Liaison Services

Construction Quality Assurance Services

- Preconstruction Project Organization
- Subgrade Preparation and Soil Liner Placement Oversight
- Soil Suitability Testing and Analysis
- Soil Liner Testing and Certification
- Geosynthetic Installation Oversight
- Certification Report Preparation

Solid Waste Related Permitting

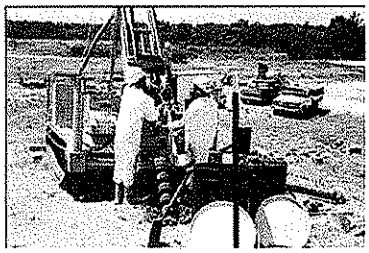
Solid Waste related permitting issues include most of the environmental media including permits related to air, water, solid waste, hazardous waste, wetlands, flooding, and mining. Terracon has prepared permit applications and permit modification applications for numerous Subtitle D Solid Waste Landfills and Subtitle C Hazardous Waste Landfills throughout the United States. In addition, Terracon has assisted our clients in securing various NPDES, Air, Wetlands, Mining, and Stormwater permits from numerous state environmental regulatory agencies. Terracon has also provided permit compliance negotiations with State and Federal regulatory agencies on behalf of solid waste permit applicants.

Terracon's proven record of solid waste permitting success is largely due to the extensive experience of the Terracon staff in the regulatory process. Several Terracon professionals have worked for various state regulatory agencies and the United States Environmental Protection Agency on the development and implementation of solid waste regulations. In addition, Terracon participates in various solid waste trade and education institutes including the Solid Waste Association of North America, and various state specific solid waste organizations throughout the Country.

The Terracon network of solid waste contacts has proven to be extremely valuable in providing the highest quality solid waste permitting services in the shortest possible time with the highest quality results. Terracon solid waste permitting expertise includes:

- Facility Citing
- Complete Cost Analysis
- Hydrogeologic Investigations
- Facility Design and Specifications
- Facility Application Development
- Hazardous Waste Exclusion Plans
- Sampling and Analysis Plans
- Operational Narratives
- Air Permitting
- Water Permitting
- Location Restriction Analysis Plans
- Closure Plans
- Financial Assurance Analysis
- Construction Quality Assurance Plans
- Implementation of Construction Quality Assurance
- Materials Testing
- Reporting
- Groundwater Monitoring System design, installation and certification
- Public Participation Programs
- Solid Waste Training Programs

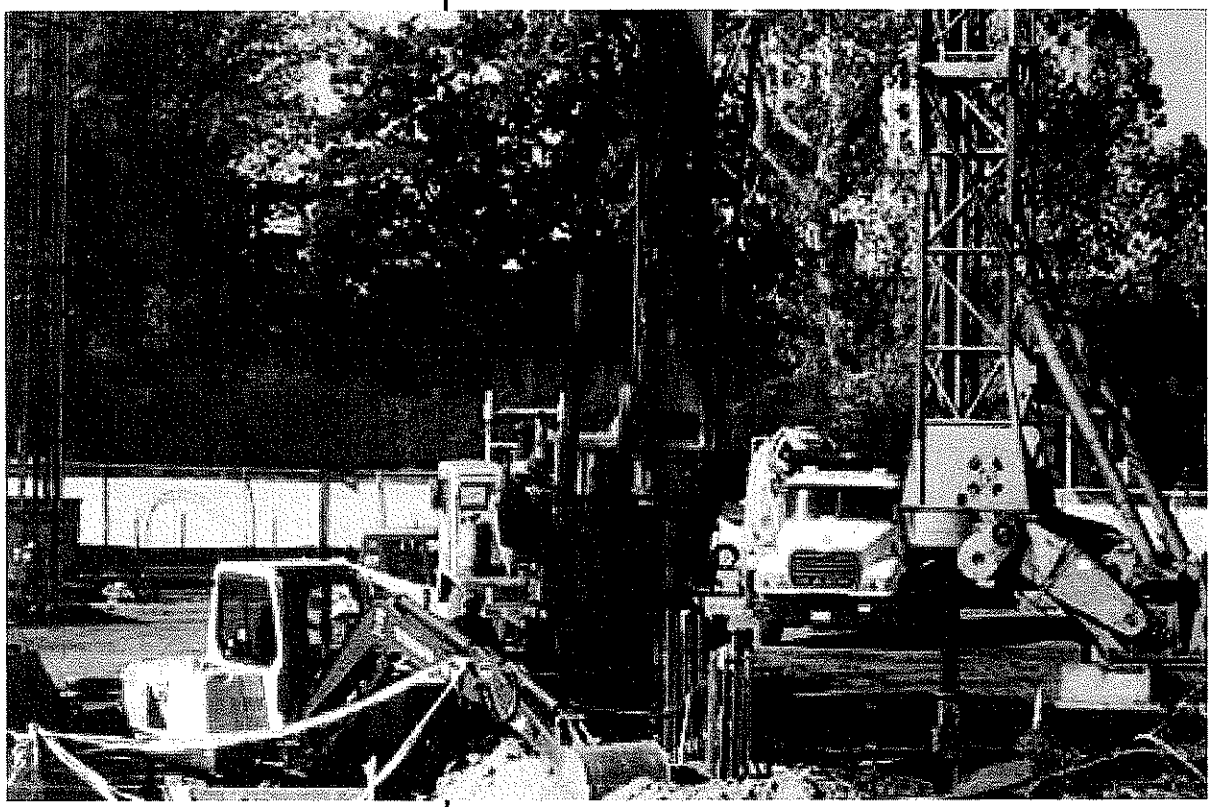
Geologic and Hydrogeologic Studies



Terracon maintains a staff of Registered Professional Geologists and Hydrogeologists who have extensive experience in conducting geologic and hydrogeologic characterizations of sites in association with permit applications, environmental assessments, extent of contamination studies, and design of facility groundwater monitoring systems. Terracon's geologists are proficient with the utilization of surface and subsurface geophysical methods, aquifer testing, determination of geotechnical properties, and the installation of groundwater monitoring wells and piezometers. Terracon also has created groundwater models in complex geological formations to evaluate flow and transport processes in relation to the potential for groundwater impact and contaminant migration.

Terracon geologists have also conducted numerous seismic analyses to determine the suitability of a site for development in relation to seismic impact areas. This information is often used by the design engineer as the basis for stability and structural analyses.

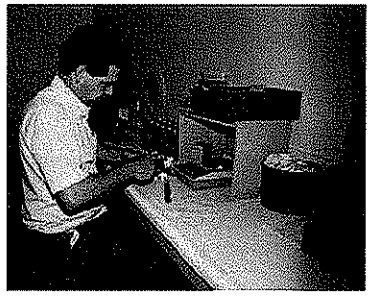
Terracon is also uniquely qualified to provide geologic related services due to proven expertise in the Terracon Geotechnical Service Line. Terracon maintains an extensive fleet of drilling equipment that can be dedicated to a solid waste project.



Geotechnical Services

Relevant Experience:

For many years, Terracon has performed various geotechnical services to assist many land fills across the United States.



Design and construction of functional, cost-effective structures require a thorough understanding of local soil, rock, and groundwater conditions. Terracon provides a wide range of services to support all phases of a project, from preliminary design through completion of the building process.

Each local Terracon office, with access to the extensive geotechnical experience and expertise of engineers, geologist, and soil technicians throughout our company, can help assess the risks associated with subsurface conditions. We all participate as vital members of the project team, focusing on project objectives and using our innovative technologies to provide practical design recommendations.

Our culture, systems and structure enable us to excel at both small and large projects.

Our geotechnical services include:

- Subsurface exploration and testing
- Foundation analysis and design
- In-situ testing and performance monitoring
- Earth structures, slops and retention systems
- Dynamic analysis and evaluation
- Soil stabilization and ground improvement
- Groundwater control
- Pavement design and subgrade evaluation

With more than 250 geotechnical engineers and one of the largest drilling fleets in the country, Terracon is well positioned to deliver quality, responsive and cost effective geotechnical engineering services, regardless of project size.

Laboratory Analysis

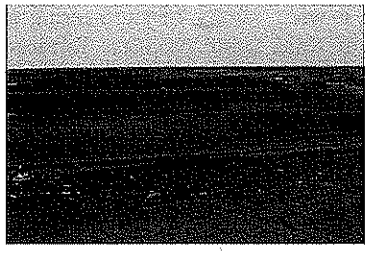
Laboratory testing at Terracon is conducted in accordance with our in-house Laboratory Quality Control Manual and in general accordance with industry recognized laboratory standards and practices.

Our laboratories are inspected by the Cement and Concrete Reference Laboratory (CCRL), the American Association for Laboratory Accreditation (A2LA) and AASHTO Materials Reference Laboratory (AMRL), U.S. Bureau of Reclamation, U.S. Forest Service, and through Terracon in-house audits. Laboratories participate in several sample reference programs sponsored by the National Bureau of Standards.

Laboratory testing services include:

- Soil
- Aggregate
- Bituminous materials
- Asphalt Concrete
- Concrete
- Masonry

Construction Materials Services



Terracon provides construction materials services to many facilities across the country including the Chambers County Landfill in Anahuac, Texas since 2001. Various onsite soil testing and observation services are performed on a regular basis.

Proper selection, quality and workmanship of construction materials play a vital role in ensuring that today's buildings and infrastructure perform adequately over long time periods. We work with clients to minimize material replacements, reduce the likelihood of deterioration, avoid potential failures, and investigate and evaluate construction materials related problems and failures when they do occur.

Local knowledge and resources, combined with technical support available from our national network of offices, enable Terracon to respond quickly to ever-changing construction needs and schedules. We respond with innovative solutions and alternatives that target your long-term performance objectives while considering cost consequences. Our services are delivered on a timely basis with consistently high value and attention to client needs.

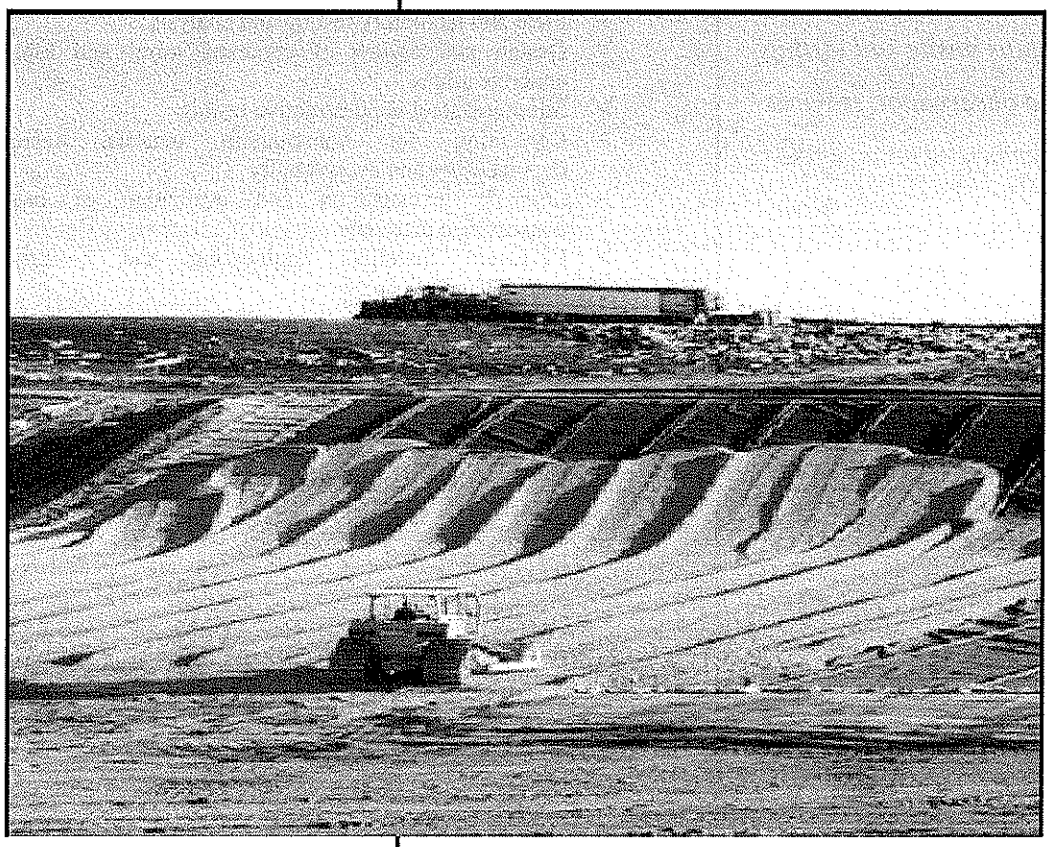
Terracon construction materials services include:

- On-site observation and monitoring
- Construction quality control and quality assurance programs
- Field and laboratory testing and analysis
- Design and review of concrete, grout and asphaltic concrete mixes
- Structural steel nondestructive testing
- Consulting for construction material selection, compatibility and acceptability
- Forensic investigation and evaluation of in-place construction materials
- Pavement materials engineering and construction management

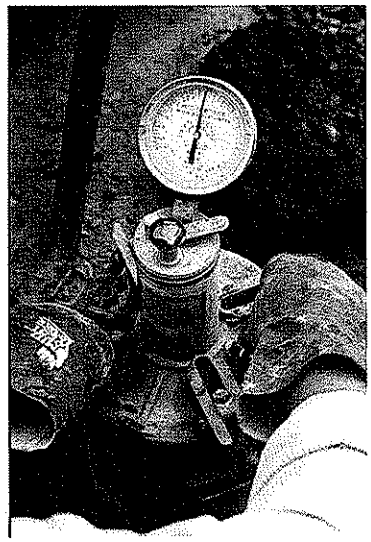
Solid Waste Facility Design and Engineering

Terracon engineers provide a wide variety of engineering and design services in support of solid waste projects. Terracon's engineering team currently holds professional licensees in most of the individual states. The disciplines represented by engineers at Terracon include Civil, Environmental, Geologic, Geotechnical, Chemical, and Mining Engineering.

Terracon Engineers have prepared engineering drawings, permit drawings, construction drawings, and technical specifications for a wide range of facilities including sold waste landfills, hazardous waste landfills, waste water treatment facilities, and storm water management facilities. The Terracon engineering team, also performs detailed analyses involving project cost benefit, seismic impact potential, risk assessment, geotechnical characterization, foundation stability, flooding potential, stormwater runoff, and landfill performance. Terracon utilizes and maintains state-of-the art equipment and computer modeling capabilities in support of engineering analysis and design.



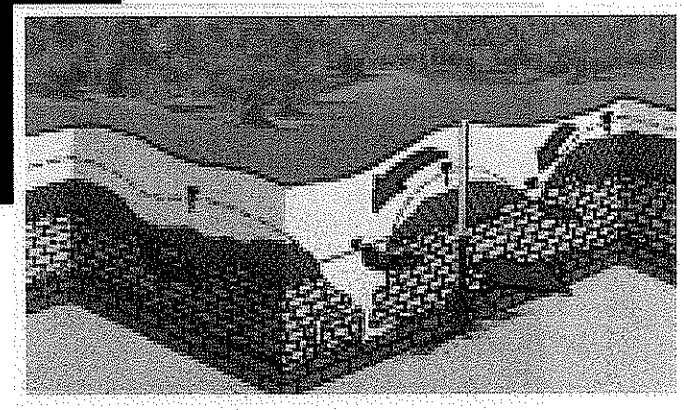
Environmental Sampling and Monitoring



Terracon specializes in the management and interpretation of groundwater monitoring data. Since Terracon provides these services to a large number of facilities, individual clients receive accurate and defensible groundwater analysis and reporting at a reasonable cost. Terracon provides groundwater monitoring services to numerous facilities nationwide.

Terracon provides statistical analysis and data interpretation of groundwater sampling results utilizing several different EPA approved software packages for numerous facilities. The analytical data received for each facility is processed through several different statistical programs to determine which program is best suited for the site groundwater conditions. A site specific statistical evaluation procedure is then developed for the facility. This approach has allowed Terracon too systematically and cost effectively evaluate current conditions and needs at specific sites.

Terracon's sampling teams are trained in the most current sampling techniques. In addition, Terracon owns and maintains the most up-to-date groundwater sampling pumps and equipment available. Terracon also provides explosive gas monitoring, NSPS surface monitoring and reporting, NPDES surface water monitoring and reporting, waste stream profiling, and soil sampling services.



Solid Waste Compliance and Related Studies

Terracon works closely with our clients to assist in compliance with applicable environmental regulation at all levels. This has involved compliance monitoring, data acquisition, modeling, risk analysis, documentation, testing, due diligence, and reporting. In some instances, Terracon representatives have provided expert witness testimony on behalf of our clients regarding environmental related issues and concerns.

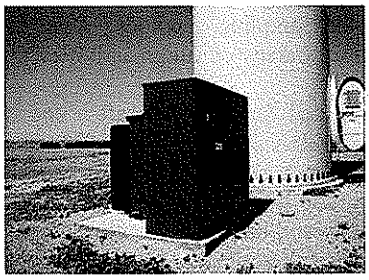
Terracon Completes and designs comprehensive Phase 1 and Phase 2 Environmental Assessments in accordance with the American Society for Testing and Materials (ASTM) Standard for Environmental Site Assessments as related to solid waste and other facilities.

Solid Waste Related Air Permitting

Terracon has successfully completed detailed air emission inventories and air permit modification data for major stationary sources, including Hazardous Air Pollutant Sources with potential emissions in excess of 120 tons per year. This work has included source identification, source speciation and stack testing for verification of emission calculations consistent with Title V Operating Permit requirements.

Terracon has also worked with numerous solid waste facilities to bring them in compliance with Landfill Gas New Source Performance Standards compliance issues. These services include field sampling of landfill gas for laboratory analysis, performance of quarterly surface monitoring, preparation of required reporting, and development of air permits for multiple municipal solid waste landfills.

Environmental Services
Regulatory Compliance



Terracon has broad experience in evaluating and resolving the regulation and management of hazardous materials as required by manufacturing, maintenance, storage and processing activities that create byproducts and waste. Utilizing our professional staff of environmental engineers, regulatory compliance specialists, chemists, hydrologists, geologists and risk assessment specialists, Terracon can conduct waste characterizations, identify applicable waste management regulations and devise compliance plans and alternatives that may include source reduction, materials recycling or commodities reclamation. Terracon's staff can also perform site assessments and feasibility studies to delineate the impacts from past waste disposal and storage practices and determine remedial design options.

Terracon can be your most cost-effective resource for the preparation of compliance documents such as permit applications, Spill Prevention Control and Countermeasure (SPCC) plans, wastewater discharges or air emissions as well as plans for storm water pollution prevention, chemical accident prevention, emergency response, and waste management unit closures.

Terracon's regulatory compliance services include:

- Regulatory applicability analysis
- Compliance assessment
- Permit application
- Recordkeeping/regulatory compliance documentation
- Environmental Management Systems using TerraTrack™
- Waste management planning/source reduction
- Materials recycling and reclamation
- Regulatory agency negotiation support
- Construction observation for new process installation
- Health and safety plan design and training
- Spill Prevention Control and Countermeasure (SPCC) plans
- Storm Water Pollution Prevention (SWPPP) plans
- Emergency response for leaks, spills and other health and safety hazards
- Litigation support and expert witness service

Safety & Health Protocols

Terracon is committed to protecting the health and safety of its employees. Specific work tasks are regularly reviewed by the corporate health and safety director for its potential risk. We reduce the risk to on-site personnel through the use of direct reading instruments and integrated air sampling methods. This data is available for personal protection strategy on future activities.

Each Terracon project is evaluated for potential safety and health hazards. Where required by OSHA 29 CFR 1910.120 or when considered necessary by Terracon, a site-specific safety and health plan is prepared. Each safety and health plan identifies personnel responsibilities for project safety and health, and outlines the nature and extent of known chemical contaminants and potential safety hazards. Terracon safety plans specify the type and frequency of air monitoring to be employed, and outline personal protective equipment to be utilized under specific site conditions. Individual project tasks are evaluated for potential safety and health hazards, and standard safe operating procedures are identified. Each safety and health plan specifies personnel training and medical surveillance requirements, decontamination procedures, site control measures, communication and emergency provisions to be employed at the project site. Each Terracon project participant attends a briefing on the contents and requirements of the safety and health plan, and signs an acknowledgment of instruction form prior to project initiation.

All Terracon employees participating in hazardous waste operations are enrolled in a medical surveillance program. The contents of Terracon baseline and annual medical examinations have been determined by Terracon medical consultants. Additional contaminant-specific health monitoring is also conducted if warranted by the concentration and potential toxicological effects offsite contaminants. Baseline examinations are performed before exposure to contaminated project sites, and each program participant is offered an exit examination upon termination or reassignment to job duties which no longer involve exposure to potentially hazardous substances.

All Terracon employees who engage in hazardous waste operations receive 40-hour safety and health training in accordance with OSHA 29 CFR1910.120 (e) prior to initial job assignment. Annual refresher training tailored to Terracon operations, policies and procedures is also prepared and conducted annually. Additional training, such as first aid/CPR and loss control presentations are also provided to Terracon personnel engaging in hazardous waste operations.

ATTACHMENT 4

PROJECT SUMMARIES

Historic Waste Site Characterization
John E. Amos Power Plant
Winfield, West Virginia

Project:
Historic Waste Site Characterization

Client:
American Electric Power

Client Contact:
Mr. Tommy Antill
700 Morrison Rd.
Gahanna, Ohio 43230
P 614.552.1415

Project Manager:
Mr. Bruce Rome

Date:
2007-2008

Fee:
$95,000

Highlights:
Geophysical Survey
Test Pits and Waste Sampling
Waste Removal Plan
Construction Plans and Specifications

H. C. Nutting Company (HCN) was contracted to perform a characterization of a historic waste facility located at the American Electric Power (AEP), John E. Amos Power Plant in Winfield, West Virginia. Proposed plant expansion will occur in the area of the historic solid waste disposal area. The waste disposal area must be removed and the area cleaned up for the proposed expansion. The study area covered a footprint of approximately 1,100 feet by 300 feet.

A geophysical survey was initially performed to identify waste limits and areas of interest for further study. Then a backhoe was used to excavate test pits into and through the waste. Test pit logs were prepared and samples of the waste and underlying soil were collected and tested for hazardous waste. The study determined the horizontal and vertical waste boundaries and waste characteristics. From here a Waste Removal plan was developed and construction documents were prepared for Contractors to excavate and disposal of the waste. The area would then be backfilled with clean soil and leveled to enable the planned expansion.

PC_John E. Amos Site

H. C. NUTTING
A Terracon COMPANY

Historic Waste Site Assessment
Village of Milan, Ohio

Project:
Historic Waste Site Assessment

Client:
Village of Milan, Ohio

Client Contact:
Mr. Bruce Bowie
11 South Main St
Milan, Ohio 44846
P 419.499.2944

Project Manager:
Mr. Bruce Rome

Date:
2008

Fee:
$55,000

Highlights:
Geophysical Survey
Test Pit Exploration
Groundwater Monitoring Wells
Landfill Gas Monitoring Probes
Environmental Site Monitoring
Site Assessment Report

H. C. Nutting Company (HCN) was contracted to perform a characterization of a historic waste facility located in a farm field in the Village of Milan, Ohio. The site was active from approximately 1957 to 1972. After the site was no longer used for waste disposal, a soil cap of unknown thickness, consisting of brown silty sand, was spread over the waste and graded. A portion of the dump site had since been incorporated into a surrounding agricultural field. The dump was used primarily for the disposal of domestic waste, which was then burned or buried. A local company reportedly contributed rubber wastes from its manufacturing processes.

Before the site work could begin a Site Investigation Plan was prepared and provided to Ohio EPA for authorization to proceed with the study. A non-evasive geophysical survey was initially performed to identify waste limits and areas of interest for further study. Then a backhoe was used to excavate test pits to determine waste boundary and soil cover thickness. A soil boring program was performed around the perimeter of the fill area and the boring locations were instrumented as ground water monitoring wells and landfill gas probes. Environmental site monitoring occurred to check for any ground water impacts and landfill gas migration.

The final site product was a Site Assessment Report with recommendation for site improvements. This report was submitted to Ohio EPA for review.

H. C. NUTTING

A Terracon COMPANY

North Side Compost Facility
Amberley Village
Hamilton County, Ohio

Client:
Amberley Village
Hamilton County, Ohio

Client Contact:
Bernard Boraten, City Manager
513.531.8675

Project Manager:
Bruce Rome

Date:
2004-2009

Fee:
$40,000

Highlights:

Landfill Gas Monitoring

Construction Plan and Bidding Documents

Prepared Reports for Agency Submittal

Construction Quality Assurance

Project Description
The Amberley Village Compost Debris Landfill is a closed landfill located in the Village of Amberley, Hamilton County, Ohio. The landfill facility operated as a series of trenches excavated 6 to 10 feet deep, probably beginning in the 1950's and ending in the late 1980's. The Village used these trenches for disposal of leaves, wood debris, tree limbs and logs. The filled trenches were then covered with 2 to 4 feet of native clay soil. Hamilton County Department of Health permitted the landfill in 1969. The Village closed the disposal facility in 1989 and replaced it with a surface composting facility.

Scope of Work
HCN prepared a Gas Monitoring Plan pursuant to Ohio Administrative Code regulations. At the Village's request, HCN prepared an application to Ohio EPA for the complete removal of the disposed material at the site. The Village had a opportunity to sell the land to a developer for commercial and residential use.

Along with the removal application, HCN prepared construction bid documents consisting of bidder's instructions, contract, general conditions, construction specifications, and construction plan drawings. The goal of the waste removal was to recycle as much of the debris. The selected contractor was able to separate the material such that 90% of the waste was recycled as landscape mulch the remaining going to a licensed municipal landfill.

HCN provided construction quality assurance services and certification that the site was cleaned of the deposited material and monitored the placement of compacted fill to backfill the excavation. The project found waste extended beyond the known boundary including under a cell tower compound. The material in the compound was not removed. HCN worked with the Villlage and Ohio EPA to develop a monitoring plan for the remaining debris.

H. C. NUTTING
A Terracon COMPANY

Woodsdale Sanitary Landfill

Butler County Department of Environmental Services
Butler County, Ohio

Client:
Butler County Dept. of Environmental Services
Butler, Ohio

Client Contact:
Dept. of Environmental Services
513.887.3077

Project Manager:
Bruce Rome

Date:
1995-1998

Fee:
$190,000

Highlights:

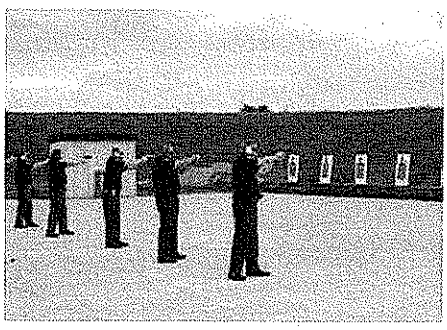
Environmental Assessment & Remedial Measures

Install Leachate Collection System

Installed Holding Tank with Monitoring Sensors

Prepared Reports for Agency Submittal

Construction Quality Assurance



The Woodsdale Sanitary Landfill is a 53 acre landfill site that operated from 1971 to 1982. It was closed in 1982 and landfill final cover, consisting of two (2) feet of compacted clayey soil, was placed in 1988. The site liner is reported to be a two (2) foot thick natural or placed clay layer. The landfill does not have a leachate management drainage layer or collection system or any landfill gas control systems. The Owner had been approached by several interested groups in seeking to use this site and adjacent owned property for other activities due to its rural setting, close location to the Great Miami River, and location to a County Park meeting facility.

Terracon/HCN (formally H. C. Nutting Company) was hired to complete an environmental assessment on the site and propose remedial measures to address several obvious problems (leachate seeps, landfill gas odors, and erosion of the final cover) and others. The project work was geared toward preparing the site to enable a final use other than open green space. Ground water quality was not part of the site assessment work.

Terracon/HCN performed a file search and review and completed a detailed site reconnaissance survey that identified locations of landfill seeps, waste settlement depressions, landfill gas blow-outs, animal burrows, and areas of final cover needing soil and vegetation repair.

A Landfill Condition Evaluation report was prepared that addressed the site conditions, proposed repairs, prioritization of repairs, and potential final uses. From this report, the immediate environmental improvements were addressed in preparation of construction plans and specifications to implement that work. Those improvements were:

- Install a toe of slope leachate collection system in the areas experiencing the greatest volume of leachate seeps,
- Install an underground double-walled holding tank with level monitoring sensors for leachate withdrawal,
- Sealing other smaller leachate breakouts,
- Install passive landfill gas vents, and
- Repair eroded final cover on one side of the landfill.

Terracon/HCN performed construction quality assurance during the installation of the leachate collection pipe and holding tank, monitored installation of passive gas vents, sealing of the smaller leachate breakouts, and monitored the repair and restoration of the final cover. A construction record report was prepared for agency submittal. Since installation of the leachate collection pipe, the leachate seeps have diminished. Butler County Sheriff's Department has constructed a shooting range facility at the landfill to provide a low-impact use of the site.

H. C. NUTTING

A Terracon COMPANY

Erskine Commons
Anchor Properties
South Bend, Indiana

Developer:
Anchor Properties
Covington, Kentucky

Contact:
Mr. Mike Ricke
Anchor Properties
859-578-2608

Project Manager:
Ron Ebelhar

Date:
2003 - 2006

Fee:
$290,000

Highlights:

Deep Dynamic Compaction of Landfill Areas

Undercuts of Waste Materials in Building Footprints

Passive Methane Gas Venting Layer

Slurry Cutoff Wall Specifications

Construction Quality Assurance

The Fritterling Landfill was a 13-acre construction and demolition debris/foundry sand landfill site that operated from 1969 to 1982. The site development originated as sand and gravel borrow area for construction of a highway interchange adjacent to property. Landfilling of foundry sand and related materials started shortly thereafter. It was closed in 1982 and an engineered final cover was never installed. The landfill did not have a liner, leachate management collection system or any landfill gas control systems. The Developer purchased 56 acres including the landfill for redevelopment, including a Wal-Mart Supercenter, Lowe's Home Improvement Store, an additional anchor and seven outlots for various retail use.

HCN/Terracon (formerly H. C. Nutting Company) was hired to perform geotechnical consulting services for the site and to provide recommendations for development of the site to avoid potential adverse effects such as short- and long-term settlement, landfill gas, and impacts on groundwater.

HCN/Terracon performed a file search and review of previous geotechnical work done in the area, site reconnaissance, geotechnical borings, and laboratory testing and engineering recommendations. Several geotechnical engineering reports were prepared that addressed the overall site conditions, then individual reports for each of the major areas to be developed. From these reports and a series of meetings with the civil designers and construction managers, the site improvements were addressed in preparation of construction plans and specifications to implement that work.

Those improvements were:

- Locate building pads outside waste areas or undercut where encroachment was unavoidable
- Evaluate sources of borrow under shallow areas of landfill
- Dynamic compaction of landfill waste area - locate parking areas and roadways in dynamic-compacted landfill areas
- Install passive landfill gas vents in building walls adjacent to landfill areas, and
- Install slurry cutoff wall to prevent infiltration from detention pond into landfill areas

HCN/Terracon performed construction quality assurance during site grading, undercuts, dynamic compaction, geosynthetic clay liner installation, leachate collection system installation, installation of passive gas venting layer, building pad compaction, cement stabilization of building pad where necessary, concrete and asphalt roadways and parking areas. Daily field reports were prepared for agency submittal and posted to an Internet ftp site for use by all project stakeholders.

H. C. NUTTING
A Terracon COMPANY

CITY OF BENTON
Closure and Post-Closure of Class 1 Solid Waste Landfill Saline County, Arkansas 1997 to 2003

Client:
City of Benton and Affiliated Engineers, Inc.

Contact:
Mayor Rick Holland
Phone: (501) 776-5900
Mike Bolin
Phone: (501) 624-4691

Involvement:
Terracon provided 100 % of the project environmental and 10% of engineering services

Project Highlights:
Class 1 Landfill closure, CQA services for final cover system, NPDES Basin, and stormwater improvements

Regulatory Liaison

Leachate Monitoring

Project Description

The City of Benton Class 1 Landfill facility, located near Bauxite, Arkansas consists of approximately 30 acres of pre-Sub-title D landfill. The Landfill was permitted in 1982 and closure began in 1992. Terracon was involved in closure, post-closure, and remediation projects at the Facility. The project included solid waste closure and post closure services for a Pre-subtitle D solid waste landfill in accordance with Arkansas Department of Environmental Quality (ADEQ) regulations. Terracon also performed construction quality assurance (CQA) on the closure of the Landfill.

Terracon performed 25% of the project closure services and 100% of the CQA services.

General Case History:

Purpose:
Purpose of the project was to close the landfill in accordance with pre-subtitle D requirements and ADEQ Regulation 22.

Results:
The project included the closure and post-closure care of a solid waste landfill, design of a final cover system, stormwater NPDES permitting, and monitoring. Additionally, leachate out-breaks at the slopes of the final cover system were investigated and remediated.

Special Problems Encountered and Solutions Applied:

This project required negotiations with adjacent landowner (ALCOA) for approximately four (4) acres of property. The property was necessary for the design and construction of a NPDES stormwater retention basin. The challenge was to deal with stringent siting requirements, while managing stormwater and constructing a final cover system designed to provide long term minimization of leachate generation.

Final Outcome

The ADEQ placed the Landfill in a 2-year post-closure period in February 2000. The post-closure period ended in September 2004 and the permit was voided.

HOOT LANDFILL
Closure and Post-Closure of Class 1 Solid Waste Landfill Miller County, Arkansas 2000 to 2004

Client:
Western Waste Industries and Waste Management

Contact:
Ms. Judy Armour
Phone: (770) 409-7406

Cost:
Terracon Estimated Fees:
$120,000
Terracon Actual Fees:
$120,000
Total Project Cost
$350,000
Estimated Total Project Cost:
$470,000

Involvement:
Terracon provided 100% of the project environmental and 25% of engineering services

Project Highlights:
Class 1 Landfill post-closure monitoring
Groundwater sampling and Reporting
Regulatory Liaison
Leachate Monitoring

Project Description
The Western Waste "Hoot" Landfill is located near the city of Texarkana in Miller County, Arkansas. The Landfill was permitted as a Class 1 Landfill in 1978. In 1999 Waste Management acquired Western Waste Industries. Terracon was involved in compliance issues, leachate monitoring, groundwater, and closure and post-closure care at the pre-Subtitle D closed Landfill. The facility has been placed into a five-year post closure period beginning on May 1997.

Terracon was involved in decommissioning and replacement of existing leachate extraction wells, revisions to the Post-Closure Care Plan at the Landfill. Terracon performed monitoring and reporting services as an independent third party during post-closure care period at the Landfill.

Terracon performed 25% of the project closure services and 100% of the groundwater and leachate management CQA services.

General Case History:
Purpose:
Purpose of the project was to close the landfill in accordance with pre-subtitle D requirements and ADEQ Regulation 22

Results:
The project included the post-closure care of a solid waste landfill, groundwater sampling and reporting, and final cover system design, and monitoring. In addition, leachate out-breaks at the slopes of the final cover system were investigated and remediated.

Special Problems Encountered and Solutions Applied:
This project required negotiations with ADEQ, Waste Management, Western Waste Industries, and their lawyers to arrive at closure and post-closure criteria that is environmentally acceptable.

Final Outcome
The ADEQ placed the Facility into a five-year post closure period beginning on May 1997. The post-closure period ended in September 2004 and the permit was voided.

Landfill Assessment and Closure Services

Fairbury, Nebraska

Client:
City of Fairbury
612 D Street
Fairbury, Nebraska 68352

Contact:
Mr. Edgar Coatman
(402) 729-5261

Date:
1994-2001

Fee:
$211,000

Highlights:

Groundwater Site Assessment

Closure Plan

Site Closure Bid Documents

Assistance on Grant Application

Natural Attenuation

The city of Fairbury and Terracon have a long working relationship for environmental services at the Fairbury Sanitary Landfill. Terracon provided engineering services during the active phase of the landfill as well as closure and post-closure.

During its involvement with the active landfill, Terracon updated the monitoring well network by installing six monitoring wells to meet the Nebraska Department of Environmental Quality (NDEQ) requirements for monitoring. Terracon also provided routine groundwater monitoring of the site. During the routine monitoring activities, relatively low concentrations of chlorinated solvents were observed in the groundwater system.

Based on the monitoring results, NDEQ directed the city of Fairbury to perform a Step 7 assessment to meet Nebraska Title 118 requirements. As part of the assessment field work, Terracon installed four temporary wells and two hydropunches to supplement the existing monitoring network to complete the assessment. Although low levels of dissolved solvent impact have been observed at the site, a nearby private drinking water well needed to be considered in the Step 7 assessment. The assessment was approved by NDEQ in early 2000.

Terracon also was involved in closure activities at the landfill. Terracon provided specifications for the final cover, prepared bid documents for construction of the approved final cover and provided material testing during construction to assure that requirements of the closure plan were met. Following installation of the final cover, Terracon prepared a post-construction report NDEQ review and approval.

Terracon also assisted the city of Fairbury in preparing a grant application to the Nebraska Environmental Trust Fund (NETF) to finance installation of the final cover. NETF approved the grant and the final cover installation was funded.

Based on the results of Terracon's assessments, NDEQ approved Terracon's remedial recommendations of natural attenuation in conjunction with long-term groundwater monitoring for volatile organic compounds.

Columbus County Landfill
Whiteville, North Carolina

Client:
Columbus County, NC

Contact:
John E. Whitehurst
(910) 640-6601

Date:
1998-2001

Highlights:

Municipal Solid Waste Landfill

Hydrogeologic Study

Methane Monitoring

Groundwater Monitoring

Construction of Database

Statistical Analysis

Terracon company provided groundwater monitoring and reporting services to Columbus County for their municipal solid waste landfill that was closed and capped by November 1998. Terracon performed compliance monitoring and hydrogeological assessments that evaluated contaminant plume migration for the Columbus County Landfill. The facility is located in the North Carolina Coastal Plain near Whiteville, NC. The hydrogeological assessment indicated that minor groundwater contamination present was migrating and additional monitor points are required in the well network. Terracon designed and supervised the installation of replacement wells on site.

Terracon completed the quarterly hydrogeological assessment required for compliance with NCAC Subchapter 13B Solid Waste Rules for the 50+ acre landfill site on surface water, groundwater and methane monitor points. Two surface water locations, 11 monitor wells and nine methane wells that comprise the monitor network were sampled. The sampling and analysis plan was inclusive of constituents listed in 40 CFR Part 258 Appendix I and II for compliance monitoring.

Terracon completed methane monitoring required by statute using a LandTec Gem 2000 meter to collect and measure methane gas concentrations from nine on-site wells. Results of the monitoring indicated that the methane concentrations produced from the landfill were in compliance with NCAC Subchapter 13B Solid Waste Rules.

Terracon provided quarterly groundwater sampling and evaluation services to Columbus County for the closed landfill. Terracon reviewed the laboratory data to ensure the data quality objectives were met. All of the historical data collected from the monitor points at the Columbus County landfill was compiled into one database. The database was used as the source data to complete statistical analysis on current and future analytical data collected at the site. Data evaluation using Grits/Stat© Version 5.0 computer software determined zero detections, screened the percentage of detections and completed the test of proportions and for analysis of variance. The environmental monitoring reports are submitted to the North Carolina Department of Environment and Natural Resources (NCDENR), which provides regulatory oversight of landfill operations.

Construction Quality Assurance on Various Landfills

Arkansas, Oklahoma, Nebraska and Kansas

Client:
Waste Management
Waste Connections
Allied Waste Industries

Contact:
Mr. Mark Adams
Waste Connections
(303) 708-8359

Mr. Karl Evans
Allied Waste Industries
(405) 606-8606

Current Fees:
$2.3 Million to Date

Date:
2001-Present

Highlights:
Construction Quality Assurance

Flexible Membrane Liner

Installation Monitoring

Terracon has performed construction quality assurance (CQA) services for Waste Management, Waste Connections and Allied Waste Industries since 2001.

The work for Waste Management consisted of performing CQA services for Subtitle D landfills and two final cover systems at landfills located in Arkansas. The CQA services for the liner systems included monitoring the installation of the clay liner, flexible membrane liner (FML) and the leachate collection system. The CQA services, for the final cover system, included monitoring the installation of the clay component of the system and the surface water drainage system.

The work for Waste Connections consisted of performing CQA services for cell construction at one landfill located in Oklahoma. Terracon has also monitored the installation of final cover systems at two Waste Connections landfills and performed a variety of other landfill related services throughout Oklahoma.

Terracon has performed CQA services at numerous landfills for Allied Waste Industries. Terracon monitored the installation of the clay liner, FML and leachate collection system at five Allied Waste Industries landfills and has also monitored the installation of final cover systems at five Allied Waste landfills.

Otoe County Landfill Risk Assessment and Landfill Closure - Nebraska City, Nebraska 1990 to present

Client:
Otoe County
Commissioners
P.O. Box 249
Nebraska City, NE 68410

Contact:
Mr. Dan Giittinger
(402) 873-9500

Cost:
Terracon Estimated Fees:
$550,000
Terracon Actual Fees:
$490,000 to date
Total Project Cost
$2.9 million
Estimated Total Project Cost:
$3,500,000

Involvement:
Terracon provided 100% of the contaminant related environmental and 20% of engineering services

Project Highlights:
Chlorinated Hydrocarbons in Complex Geological Setting

Historical Records and Interviews

Grant Application Preparation

Electromagnetic Surveys

Hydropunch Sampling

Monitoring Well Installation

Alternative Cleanup Levels

RAGS Risk Assessment

Remedial Action Plan Preparation

CQA Services

Landfill Closure Services

Long-Term Monitoring/Monitored Natural Attenuation

Project Description
The Otoe County Landfill consists of approximately 25-acres of former landfilling operations. In 1990, Terracon was retained to conduct a Hydrogeological Assessment Report (HAR) as part of the landfill permitting process with the Nebraska Department of Environmental Quality. During the course of the HAR, chlorinated solvent groundwater plume with an extent of approximately 17 acres was identified. With the contamination, the project objectives changed to contaminant plume delineation, contaminant plume risk mitigation, and site closure services.

Terracon performed 100% of the contaminant related environmental services. With respect to formal site closure, Terracon provided design support to the Otoe County's established civil engineering firm to make sure site closure design was adequate for planned remedial action. During the closure implementation, Terracon provided 100% of the CQA service and 100% of the gas vent design and installation.

General Case History:
Purpose:
The initial purpose of the project was to permit the landfill and expand the site through a NDEQ approved landfill expansion design. With the discovery of chlorinated solvent contamination, the purpose changed to contaminant plume definition, source identification/characterization, and site closure under a NDEQ approved design.

Results:
Based on the results of the risk assessment, the NDEQ approved the remedial action recommended by Terracon. The remedial action has been implemented, which included: proper site closure, establishing a legally binding water restriction ordinance, private water well abandonment within the ordinance boundary; and demonstrating natural degradation of the chlorinated solvent compounds. Terracon is now conducting long-term monitored natural attenuation (MNA) monitoring at the site.

Special Problems Encountered and Solutions Applied:
After reviewing the contaminant assessment and initial source identification documentation, the NDEQ recommended that the source be removed (an estimated 6,000 drums). The preliminary estimate to remove and properly dispose of the drums was $16 million. The potential responsible party of the drums is the largest employer in Otoe County. Terracon and Otoe County engaged this party to participate in project as a partner. Terracon conducted additional drum related assessment and performed a cost/benefit analysis of drum removal. Terracon submitted this report to the NDEQ and they agreed that drum removal was not economically feasible for the potential benefit that may be realized.

NDEQ also recommended that groundwater be cleaned up to NDEQ-established maximum contaminant levels (MCLs). Instead of accepting the NDEQ's cleanup recommendations, Terracon proposed that a human health risk assessment be

conducted as part of the remedial action plan in an effort to establish risk-based alternate cleanup levels (ACLs). NDEQ accepted this approach. The results of the risk assessment indicated that active remediation of the site would not be needed provided that: 1) access to the site was restricted; 2) the site be properly closed with a Sub-Title D grade final cover; 3) a well restriction ordinance extending approximately 2000 feet from the site boundary be implemented; and 4) abandonment of water wells within the risk-based ordinance boundary. The NDEQ approved the risk assessment and the remedial action approach for the facility.

Final Outcome

With the innovative approaches used by Terracon on this project, Otoe County was able to close this facility and implement a remedial action plan for less than $3 million. Had initial recommendations of the NDEQ been followed, the preliminary cost projections for site cleanup and closure would have exceeded $20 million. As a note, most of the site closure was funded through a NDEQ closure assistance grant that was awarded based a grant application prepared by Terracon.

ATTACHMENT 5

PERSONNEL RESUMES

RONALD J. EBELHAR, P. E., F.ASCE, F.ASTM

SENIOR PRINCIPAL - LANDFILL & ENVIRONMENTAL SERVICES

A Terracon COMPANY

PROFESSIONAL EXPERIENCE

Mr. Ebelhar has served as project manager and senior consultant in connection with selected geotechnical and environmental engineering projects worldwide. Mr. Ebelhar has provided design and consulting services for a variety of commercial, industrial, waste disposal (RCRA/TSCA) and public utility applications; environmental site evaluations for commercial, industrial, and public utility sites; geotechnical engineering design and construction services; and marine geosciences and engineering field explorations.

AREAS OF EXPERTISE INCLUDE:

Geotechnical Engineering
Seismic Site Response / Vibration Analyses
Marine Geosciences and Engineering
Environmental Site Evaluations
Environmental/Remedial/Landfill Engineering Design

PROJECT EXPERIENCE

- American Electric Power, Rockport Plant Flyash Landfill, Rockport, Indiana – Project manager and certifying engineer for construction quality assurance. Senior principal review for design of landfill expansion area and geotechnical design calculation package.
- American Electric Power, Tanner's Creek Flyash Storage Pond, Lawrenceburg, Indiana – Senior principal review of conceptual and engineering design of splitter dike employing Geotubes.
- Cinergy, Zimmer Power Plant FGD Landfill, Moscow, Ohio – project manager and certifying engineer for construction quality assurance on a 17-acre landfill expansion.
- Skinner Landfill Superfund Site, West Chester, Ohio - CERCLA site remedial design communication with PRPs, OEPA and USEPA. Site includes RCRA Subtitle C landfill cover, contaminated groundwater collection and treatment system, upgradient groundwater control system evaluation, and Soil Vapor Extraction system feasibility evaluation.
- Waste Management of Kentucky, Outer Loop RDF. Louisville, Kentucky - Prepared conceptual layout and grading plans for microbial algae - based leachate treatment systems. Designed cascade aeration system "polishing step" for ammonia removal.
- Parsons, Fernald Environmental Restoration Project, Fernald, Ohio - Peer review for settlement evaluation of On-Site Disposal Facility
- City of Cincinnati, Ridgewood Development Site, Cincinnati, Ohio - Designed retrofit leachate collection system and barrier for landfill adjacent to industrial development site.

EDUCATION

Bachelor of Science, Civil Engineering, University of Kentucky, 1975

Master of Science, Civil Engineering, University of Kentucky, 1976

REGISTRATIONS

Professional Engineer in Ohio, Kentucky, Indiana, West Virginia, Texas, Utah, Pennsylvania and Illinois

AFFILIATIONS

ASTM Committee D18 Chairman, 2008 to present

ASTM Committee D18 First Vice Chairman, 2001 to 2007

American Society of Civil Engineers, 1977 to present

Society of American Military Engineers, 1994 to present

ASTM Special Services Award for contributions to the development of standards for soil dynamics and cyclic testing, 1986 and 1993

ASTM Technical Editors Award, 1995

ASTM A. Ivan Johnson Outstanding Achievement Award, 2002

ASTM Award of Merit, June 2003

ASTM Woodland G. Shockley Award, January 2007

WORK HISTORY

H. C. Nutting Company, A Division of Terracon, Principal Engineer from 1996 to present

Rust E & I, Vice Pres. . Principal Engineer from 1987 to 1996

McClelland Engineer, Consultant from 1977 to 1987

- Commonwealth of Kentucky, Maxey Flats Disposal Facility, Hillsboro, Kentucky - Monitoring of a low level nuclear waste disposal facility for two years. Management of five-member site staff performing monitoring surface water, groundwater and air quality, maintenance of existing leachate removal system and landfill cell covers, design and installation of surface water control system improvements and new PVC landfill covers, and construction oversight for a new geosynthetic-lined disposal cell.

- CECOS International, Cap Subsidence Modeling, Williamsburg, Ohio - Project Manager for evaluation of potential for subsidence of RCRA/TSCA Landfill Cap.

- CECOS, Aber Road, Williamsburg, Ohio - CQA Certifying engineer for double composite-lined temporary containment facility for potentially contaminated surface runoff, Stormwater Management Facilities, Interim Gas Control system for Cell 2.

- Waste Management of Kentucky, Blue Ridge RDF, Irvine, Kentucky - Certifying engineer for 4-acre vertical expansion, including structural fill berm on existing slope, geosynthetic clay liner and HDPE geomembrane liner.

- Waste Management of Ohio, Stony Hollow RDF, Dayton, Ohio - Certifying engineer for Cell 1B involving rock excavation, subbase isolation and structural fill placement, compacted soil liner placement, geosynthetic clay liner, HDPE geomembrane and leachate management media for a 7.6-acre cell.

- Waste Management, ELDA RDF, Cincinnati, Ohio - Supervised geotechnical slope and seismic stability analyses (including site response analyses, yield acceleration and cumulative deformation) for 180-ft. high solid waste landfill embankment on hillside site. Supervised design of Construction & Demolition Debris landfill expansion

- GENCO, Hazardous Waste Landfills, Bangkok, Thailand - supervised and prepared aspects of design documents for hazardous waste landfills at Ratchaburi and Rayong Industrial Estate. Provided data to support proformae and permit documents, prepare specifications, CQA and Operations plans.

- Westinghouse, Interim Storage Facility, Bloomington, Indiana - Supervised and performed geotechnical, geologic and hydrogeologic studies of the overburden soils and limestone bedrock materials.

- Aptus, Tooele, Utah - project manager for design and permitting a 1000-acre RCRA/TSCA waste disposal facility. Responsible for exploration, construction cost estimates, closure/post closure monitoring program design, contract administration, budget and schedule.

- Newport Steel, Wilder, Kentucky - Designed RCRA Subtitle C-equivalent asphalt cap for slag landfill. Supervised geotechnical study for design and load testing of deep foundation systems for various plant expansions. Design activities included 120-ft-long pipe piles, wave equation/pile drivability predictions, compile load tests.

BRUCE E. ROME, P.E.
SR. PROJECT ENVIRONMENTAL ENGINEER

A Terracon COMPANY

PROFESSIONAL EXPERIENCE

Mr. Rome has 35 years of experience involved with landfill site engineering including grading, storm water drainage, regulatory permitting. Responsibilities include conceptual and final design, report and drawing preparation, development of construction specifications, construction bidding and contract documents, coordination and management of construction observation, volume and cost estimate calculations, hydrologic analysis, and hydraulic analysis of drainage channels, spillways, and detention ponds. Specific project experience is represented below.

PROJECT EXPERIENCE

- **Akron Landfill, Waste Management, Inc., Akron, OH** Project Engineer/Manager to prepare construction plans and specifications, oversee quality assurance for cover and drainage improvements, upgrades to landfill gas control system, and engineering assistance during construction for a closed 30 acre landfill.
- **Amberley Village, North Site Compost Facility, OH** Project Engineer and Manager to prepare permit documents, construction plans and specifications, and bidding documents for leaf and wood debris removal from former compost site.
- **Folkerstma Refuse Site, PRP Settling Defendants, Walker, MI** Project Engineer to prepare construction plans and specifications including design of a final grade and cover system, groundwater control system, and stream clean up for an NPL waste disposal facility. Oversee construction certification
- **Fryman Property Cleanup, City of Rising Sun, IN** Project Engineer to prepare construction plans, specifications, and contract documents for contaminated soil cleanup on a former salvage yard site.
- **Hoffman Road Landfill, Division of Solid Waste, City of Toledo, Toledo, OH** Project Engineer for investigation of old landfill areas to incorporate environmental improvements into landfill expansion plans
- **John E. Amos Power Plant, St. Albans, WV** Project Engineer to investigate a historic waste disposal area on an power plant facility and develop a waste removal plan and construction plans and specifications.
- **KAVCO Landfill, Barry County, MI** Project Engineer to investigate conditions of prematurely closed landfill for design of cover system and environmental controls. Prepared construction plans and specifications for final landfill cover.
- **Kentwood Landfill, Kent County Department of Public Works, Kentwood, MI** Project Engineer to prepare construction plans and specification for NPL waste disposal facility clean up and closure and Project Manage/Engineer for construction quality assurance oversight
- **Metro Landfill, Waste Management of Wisconsin, Franklin, WI** Investigation of existing 40 acre landfill for design of environmental improvements including compacted clay cut off walls, leachate collection systems to enable a former hazardous waste landfill to remain in operation for municipal solid waste disposal.
- **Omega Hills Landfill, Waste Management of Wisconsin, Germantown, WI** Project Engineer for investigation of an existing 100 acre hazardous/non-hazardous waste landfill to design improvements including soil-bentonite cut off walls, leachate collection systems, and surface water drainage controls to close the facility.

EDUCATION

Bachelor of Science, CEE, University of Wisconsin-Madison 1979

A.A.S., Civil, Gateway Technical Institute, Racine, WI 1974

REGISTRATIONS

Professional Engineer in Indiana, Kentucky, Michigan, Ohio, and Wisconsin

CERTIFICATIONS

OSHA 40-hour Hazardous Materials Training

AFFILIATIONS

American Society of Civil Engineers

EMPLOYMENT HISTORY

H. C. Nutting Company, A Terracon Company, Professional Engineer 1997 to present

RUST E & I, Professional Engineer 1994 to 1997

Warzyn Engineering, Inc., Professional Engineer 1974 to 1994

- **Skinner Landfill, PRP Group, West Chester, OH** Project Engineer to complete data review of landfill operations including site reconnaissance to design a landfill cover system for an inactive disposal facility.
- **Village of Milan, Historic Waste Facility, Milan, OH** Project Engineer to oversee the investigation of environmental impacts of a 1.4-acre historic waste fill.
- **Willowcreek Landfill, Browning Ferris Industries, Atwater, OH** Project Engineer for investigation of existing landfill to incorporate improvements as part of the landfill expansion.
- **Woodsdale Road Landfill, Butler County, OH** Project Engineer for investigation of existing landfill conditions to design environmental improvements for a closed municipal solid waste landfill to enable post-closure use.

Mr. Rome has worked on various civil & environmental engineering projects at the following locations:

Landfill Project List

- Adams County LF, West Union, OH
- Akron Landfill, Akron, OH
- Amberley Village LF, Amberley, OH
- Beech Hollow Landfill, Wellston, OH
- Bond Road LF, Hamilton County, OH
- Brown County LF, Georgetown, OH
- Cherokee Run LF, Bellefontaine, OH
- Cincinnati Water Works Sludge Disposal Landfill, Fairfield, OH
- ELDA Landfill, Cincinnati, OH
- Golsch C&DD Landfill, Hooven, OH
- Hoffman Road Landfill, Toledo, OH
- Miamitown C&DD LF, Miamitown, OH
- Pike Sanitation Landfill, Waverly, OH
- Pine Grove Landfill, Amanda, OH
- Rumpke Sanitary LF, Cincinnati, OH
- Seneca East LF, Tiffin, OH
- Skinner Superfund LF, West Chester, OH
- Suburban South LF, Brownsville, OH
- Triangle Landfill, Ross County, OH
- Village of Milan, OH
- Wellston Landfill, Wellston, OH
- Whitewater C&DD Landfill, Cincinnati, OH
- Willowcreek Landfill, Atwater, OH
- Woodsdale Road LF, Butler County, OH

- Blue Ridge Landfill, Irvine, KY
- Dow Corning Landfill, Carrollton, KY
- Newport Steel Landfill, Wilder, KY
- Maysville-Mason County LF, Maysville, KY
- Montgomery County LF, KY
- Outer Loop Landfill, Louisville, KY
- Pendleton County LF, Butler, KY
- Wilder Ash Fill Site, Wilder, KY

- Fryman Property Cleanup, Rising Sun, IN
- Rockport Fly Ash LF, Rockport, IN

- AEP Historic Waste Site, St. Albans, WV

- Chain of Rocks LF, Chouteau Island, IL
- Milam Landfill, Fairmont City, IL

- Folkerstma Refuse Site, Walker, MI
- Jefferson Conner Revitalization Project, Detroit, MI
- KAVCO Landfill, Barry County, MI
- Kentwood Landfill, Kentwood, MI

- City of Ashland Landfill, Ashland, WI
- Fond du Lac County LF, Fond du Lac, WI
- Lauer I Landfill, Menomonee Falls, WI
- Metro Landfill, Franklin, WI
- Metropolitan Refuse District, Middleton, WI
- Muskego Landfill, Muskego, WI
- Omega Hills Landfill, Germantown, WI
- Orchard Ridge LF, Menomonee Falls, WI
- Parkview LF, Menomonee Falls, WI
- Pheasant Run LF, Bristol, WI
- WP&L Ash Landfill, Portage, WI
- WP&L Ash Landfill, Sheboygan, WI

- Thailand Hazardous Waste Process and Disposal Facility, Plauk Daeng, Rayong Province, Thailand

FRED W. ERDMANN, P.E., P.G.
SENIOR CONSULTANT

A Terracon COMPANY

PROFESSIONAL EXPERIENCE

Mr. Erdmann has over 41 years of experience in the area of applied geological engineering. He provides project management and technical assistance to clients seeking solutions to problems in Environmental Engineering and Groundwater Cleanup Projects.

AREAS OF EXPERTISE INCLUDE:

Groundwater Contamination Studies	Closure Cost Estimates
Waste Management Engineering	Litigation Support
Environmental Site Remediation	Environmental Compliance
Environmental Site Assessments	Environmental Audits

PROJECT EXPERIENCE

- **Brine Contaminated Aquifer Cleanup** - Performed an electrical resistivity survey to delineate the extent of salt brine contamination in an alluvial aquifer located in Lawrenceburg, Indiana. The study served as a basis for designing and implementing a groundwater pumping program to reduce chloride levels below Secondary Drinking Water Standards, to rehabilitate the aquifer as a source of public drinking water.

- **West Kentucky Sanitary Landfill, near Mayfield, Kentucky** - Conducted a study to look for evidence of fault displacement in test trenches at a new cell expansion area of the West Kentucky Sanitary Landfill, near Mayfield, Kentucky.

- **Closed Sanitary Landfill near Wellston, Ohio** - Directed the investigation of acidic seeps at a closed sanitary landfill near Wellston, Ohio. Most of the acid-forming material was linked to overburden that originated from a former surface mine. The barren areas were graded and successfully treated by the application of pulverized limestone along with fertilizer, seed and mulch.

- **Former Trap Shooting Range in Northern Kentucky** - Directed a study of lead and arsenic in surficial soil at a former trap shooting range in Northern Kentucky for a land developer. Fifty-eight sampling stations were established down range of the trap house and one water sample was collected from a small watercourse. Lead concentrations were found to be elevated above back-ground levels, but none exceeded State or U. S. EPA action levels.

- **Contaminated Pot Liner Study** - Directed a comprehensive hydrogeological investigation of an aluminum fabrication and reduction complex near Ravenswood, West Virginia to assess and control ground water contamination.

- **Four County Landfill in Fulton County, Indiana** - Performed groundwater investigations at the Four County Landfill in Fulton County, Indiana to evaluate compliance with groundwater monitoring requirements.

EDUCATION

Bachelor of Science, Geological Engineering, University of Missouri at Rolla (Missouri School of Mines), 1967

Master of Science, Geological Engineering, University of Missouri at Rolla (Missouri School of Mines), 1971

REGISTRATIONS

Professional Engineer in Ohio, Kentucky, Missouri, Florida, Indiana, Pennsylvania, West Virginia and Michigan

Professional Geologist in Kentucky and Tennessee

CERTIFICATIONS

Numerous specialty seminars on geology, mining and geotechnical engineering

PADI Certified Open Water SCUBA Diver

AFFILIATIONS

Association of Environmental and Engineering Geologists

American Institute of Professional Geologists

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Professional Engineer & Professional Geologist from 2001 to present

ENSAFE - 1998 to 2001

Dames & Moore - 1985 to 1998

Soil & Material Engineers - 1982 to 1985

Dames & Moore - 1967 to 1982

- **Groundwater Investigation in Dayton, Ohio** - Directed the groundwater investigation for a VOC contaminated site at an adhesives manufacturing plant in Dayton, Ohio. Designed and installed an emergency extraction well system, followed by an expanded extraction well system and an air-stripping tower that has operated successfully.

- **SVE System in Cincinnati, Ohio** - Directed soil and groundwater investigations at a former elevator manufacturing facility in Cincinnati, Ohio. Directed the removal of oil-contaminated soil and the installation of an SVE system to remove VOCs from the site.

- **Lima, Ohio** - Directed the development of closure plan for four mixed (radioactive and hazardous) waste impoundments at a manufacturing complex in Lima, Ohio.

- **Wright-Patterson Air Force Base in Dayton, Ohio** - Directed a subsurface investigation at Wright-Patterson Air Force Base in Dayton, Ohio to delineate the extent of PCB's in soil and groundwater, resulting from the release of transformer dielectric fluid.

- **Fueling Station in Nitro, West Virginia** - Managed the remediation of an underground fuel spill at a major truck stop and fueling station in Nitro, West Virginia.

- **Interdiction Well System in Lawrenceburg, Indiana** - Designed and implemented an interdiction well system to remove salt brine from an alluvial aquifer that was contaminated as a result of a gas well blow-out in Lawrenceburg, Indiana.

- **Latonia (Ft. Wright), Kentucky** - Directed a Remedial Investigation / Feasibility Study at a former gasoline and asphalt refinery in Latonia (Ft. Wright), Kentucky.

- **Closure and Post Closure Plans for Allied Drum Service Company Facility, Louisville, Kentucky** - Prepared Closure Plans and Post Closure Plans for the Allied Drum Service Company facility in Louisville, Kentucky. All of the RCRA units included in these plans have since been clean closed. Mr. Erdmann also prepared a Groundwater Sampling and Analysis Plan for the facility. All of the documents were approved by the Kentucky Division of Waste Management.

- **Ceramics Plant in Lawrenceburg, Kentucky** - Directed the development of a closure plan and post closure permit application for the chemical fixation of lead-bearing sludges at a ceramics plant in Lawrenceburg, Kentucky, and including preparation of bid documents. Assisted the owner in bid evaluation and contractor selection, and then performed quality assurance oversight.

- **Groundwater Study** - Performed investigations of a fractured bedrock aquifer at a hazardous waste management facility near Maysville, Kentucky in support of a groundwater monitoring requirement. Prepared a *Groundwater Monitoring Waiver Demonstration Report* for the owner that was accepted by U.S. EPA Region IV.

- **Hazardous Waste Disposal Site near Maysville, Kentucky** - Directed the closure of two former sludge drying beds at a hazardous waste disposal site near Maysville, Kentucky. The project involved preparation of plans and specifications, contractor supervision, and closure certification.

- **Soil and Groundwater Investigation** - Directed the investigation of soil and groundwater seepage at a former wood treatment facility in northwest Ohio that used chromated copper arsenate as a wood preservative.

- **Contaminated Sand Blast Media** - Directed the preparation of closure plans for three sites in northern Kentucky where characteristically hazardous sand blasting media was stored or disposed of by a bridge painting contractor. Client was the Kentucky Transportation Cabinet.

- **Noblesville, Indiana** - Directed the development of a RCRA Facility Investigation (RFI) and the design of Interim Measures for an industrial facility in Noblesville, Indiana. For this project, groundwater was impacted by volatile organic compounds that were disposed of in a solid waste landfill.

JAMES MARK WITHERSPOON, P.G.
OFFICE MANAGER

PROFESSIONAL EXPERIENCE

Mr. Witherspoon has more than 20 years of experience in hydrogeology, project management and government relations. Mr. Witherspoon is Co-founder, President, and Chief Executive Officer of Genesis Environmental Consulting, Inc. (GEC). In this capacity, he is responsible for all operational and technical aspects of the firm including personnel, and quality control. In addition, Mr. Witherspoon serves as project manager on various projects. He was previously the Branch Manager of the Little Rock, Arkansas office of James L. Grant & Associates, Inc (JLGA). Prior to joining JLGA, Mr. Witherspoon was Chief of the Solid Waste Management Division of the Arkansas Department of Environmental Quality (ADEQ). In that capacity, he was responsible for all aspects of solid waste permitting, enforcement and planning in Arkansas. This required extensive and detailed involvement with the technical development of State and Federal regulatory approaches to solid waste management.

During his career with the ADEQ, Mr. Witherspoon also served as geologist supervisor, inspection engineer supervisor, and land disposal section manager responsible for technical review of solid waste, hazardous waste, and UIC permits. He was also responsible for all groundwater assessments and remedial actions in those media. As a result of these duties, Mr. Witherspoon has extensive field experience relating to a wide variety of groundwater related projects.

Mr. Witherspoon was selected as one of only 7 hydrogeologists to serve on the U.S. EPA Hazardous Waste Groundwater Task Force in Washington, D.C. The task force objective was to analyze facilities nationwide to evaluate the existing groundwater monitoring systems, assess groundwater contamination potential, and assess eligibility to receive waste from Superfund site remediation. As one of the seven core team hydrogeologists, Mr. Witherspoon was responsible for all aspects of technical analysis and project management. Projects were located in nine states and four EPA regions.

Mr. Witherspoon served on the original ADEQ Hazardous Waste Technical Advisory Committee developing the original Hazardous Waste Code for the State of Arkansas. This committee was responsible for technical siting and operational standards for the State.

Mr. Witherspoon was also a full member of the Association of State and Territorial Solid Waste Management Officials headquartered in Washington, D.C. While a member of this organization, Mr. Witherspoon was the chairman of the Subtitle "D" committee. In this capacity, he worked directly with EPA on the development of new federal regulations pertaining to solid waste management. This Subtitle "D" committee was very active with EPA in developing the technical aspects of the Subtitle D landfill disposal criteria, which became effective in 1993.

Since joining the environmental consulting industry, Mr. Witherspoon continued his involvement with regulation development on the Local and State level. Mr. Witherspoon has worked with most of the Regional Solid Waste Management Districts in Arkansas for development of regional solid waste management plans or implementation of various elements of solid waste management systems.

EDUCATION

M.A. Physical Geography/ Geology, 1979, Indiana State University

B.S. Physical Geography, 1977, University of Central Arkansas

REGISTRATIONS

RegisteredProfessional Geologist: Arkansas #14

Licensed Solid Waste Facility Operator: Arkansas Master Level #713

CERTIFICATIONS

Professional Geologist: American Institute of Professional Geologists #7254

AFFILIATIONS

American Institute of Professional Geologists

Solid Waste Association of North America – Arkansas Chapter President

Arkansas Environmental Academy - Board and Adjunct instructor

Arkansas Environmental Federation

Arkansas Solid Waste Operators Licensing Board

WORK HISTORY

Terracon, Office Manager, Little Rock Office, 2004-present

Genesis Environmental Consulting, Inc., Little Rock, AR, President 1992 to 2004

James L. Grant and Associates, Inc., Little Rock, AR, Branch Manager-AR Branch, 1990-1992

Arkansas Department of Environmental Quality, Little Rock, AR, Chief-Solid Waste Management Division, 1979-1990

During his career, Mr. Witherspoon has appeared in numerous administrative hearings, and various levels of legal proceedings. He has been accepted as an expert witness in solid waste management and hydrogeology in several specific cases across the country.

Mr. Witherspoon currently is an adjunct instructor with the Arkansas Environmental Academy in Camden, Arkansas and was recently appointed to the Advisory Board for the Academy. He teaches numerous courses in solid waste management every year. These courses are for all levels of solid waste licensing as required by the State of Arkansas. This coursework is prepared and submitted to the Arkansas Department of Environmental Quality each year for approval under Arkansas Regulation 27.

PROJECT EXPERIENCE

- **Class I Sanitary Landfill**
  Prepared Solid Waste Permit Applications for submittal to the Arkansas Department of Environmental Quality (ADEQ) for the City of Fort Smith Class I Sanitary Landfill in 1992 and 1993, 1996, 1998, and 2003, including hydrogeologic analysis, groundwater monitoring system design and operation, and complete Subtitle D regulatory compliance.

- **Tri County Regional Solid Waste Management District**
  Served as solid waste consultant to the District for several years providing services that included the development of the District's Comprehensive Solid Waste Management Plan, landfill siting studies, regional recycling plans, and development of the District's solid waste rules and regulations for landfills.

- **Northwest Arkansas Regional Solid Waste Management District**
  Development and implementation of complete solid waste management plans including recycling, open dump closure program, collection, and disposal plans. Also provided technical support in evaluating District's potential purchase of private landfill including all aspects of cost evaluation and feasibility analysis.

- **Reynolds Metals Subtitle C Landfill**
  Provided technical and regulatory support in the development of a complete Subtitle C landfill permit application including all aspects of public participation.

ADDITIONAL COURSES

Mr Witherspoon is continually involved with additional coursework involving Hydrogeology, Solid Waste Management and Hazardous Waste Management. He is responsible for the preparation of coursework for solid waste licensing training as subject to review and approval by the Arkansas Environmental Academy and the Arkansas Department of Environmental Quality.

PUBLICATIONS/PRESENTATIONS

Mr. Witherspoon is a regular presenter for associations in Arkansas including the Arkansas Environmental Federation, the Arkansas Environmental Academy, and the Solid Waste Association of North America.

DAVID C. McCORMICK, P.E.

SENIOR PROJECT ENGINEER

PROFESSIONAL EXPERIENCE

Mr. McCormick is Senior Project Engineer for Terracon's Little Rock, Arkansas office. He has 17 years of experience in solid waste landfill engineering, design, and planning. He has extensive experience in designing, permitting, and certifying containment projects for public and private sectors for municipal and hazardous waste facilities, chemical companies, and mining projects.

Mr. McCormick also has a vast amount of experience in providing waste management services, including applications and quality assurance across the world. He represented the World Bank on a Gold Mine project in Russia, and is currently providing waste management services, design, and permitting for a site in Aruba.

PROJECT EXPERIENCE

- **American Electric Power – Flint Creek Facility, AR**
  Served as Project Engineer providing design and permitting modification for an existing Class 3N Landfill.

- **American Electric Power – Hempstead, AR**
  Served as Project Engineer providing permitting for a new Class 3N Landfill.

- **NABORS Landfill – Mountain Home, AR**
  Performing Certifying Engineer duties for Cell 1, Area 1-3 Landfill.

- **City of Hope – Hope AR**
  Performing permitting for the expansion of a Class 4 Landfill.

- **Valero Aruba Refinery Company (VARC) - Aruba**
  Performing the design of the facilities waste management system.

- **Type IV Landfill – South Texas**
  Served as Project Manager providing design and permitting services for Type IV Landfill in south Texas.

- **El Centro Municipal Landfill – Robstown, TX**
  Served as Project Manager providing design and permitting, Construction Management, Groundwater System installation and sampling, and CQA services for this "Greenwood Facility". Worked directly on the design and CQA on Cells 8, 9,10, and 11.

- **US Ecology Hazardous Waste Facility – Robstown, TX**
  Provided project management, design and permitting, and CQA services for numerous cells. Worked directly on Cells 26, 29, 38, 39 40, 41,42 48-1 through 4 and Cells 40 through 42 Above Grade. Also involved with the sites perimeter slurry wall, groundwater sampling and remediation system.

- **Hidalgo County Precinct IV Landfill – Hidalgo County, TX**

  Assisted Hidalgo County with their agreed order on the remediation and closure of their landfill. The duties included design, permitting construction management, and CQA of the remediation of a closed

EDUCATION

Bachelor of Science, Agricultural Engineering (soils), University of Wisconsin-Madison, 1990

REGISTRATIONS

Registered Professional Civil Engineer; Texas, Louisiana, Arkansas.

CERTIFICATIONS

Hazardous Waste Site Investigation and Safety Training

AFFILIATIONS

Texas Society of Professional Engineers; Officer from 1998 - 2006 – Nueces Chapter

WORK HISTORY

Terracon, Senior Project Engineer, 2006-Present

Southern Ecology Management, Inc., Senior Project Engineer, 1998-2006

Naismith Engineering, Inc., Project Engineer, 1997-1998

Golder Construction Services, Inc., Project Engineer, 1995-1997, Resident Engineer/Project Engineer, 1992-1995

Environmental Construction Services, Inc., (Division of Golder Associates) Staff Engineer, 1990-1992

Golder Associates, Inc., Monitoring Technician, 1989

landfill and construction of the modified landfill cover.

- **Sheet's Property – Corpus Christi, Texas**
  Remediation of an abandoned Chrome Plating Facility. Performed the sampling, documentation, and reporting required for the Voluntary Clean-up Program as administered by the TCEQ. The client had the facility approved for closure.

- **City of Kingsville – Kingsville, Texas**
  Performed permit modification of the Groundwater Sampling Plan. Also involved with the installation of the modified system and the sampling of the modified system.

- **Waste Management Landfills**
  Atascocita (TX), Skyline (TX), DFW (TX), and Security (TX), Baton Rouge (LA). Arlington (Oregon)

- **Chemical Waste Management Landfills**
  Lake Charles (LA), Arlington (Oregon)

- **BFI Landfills**
  Sinton, Golden Triangle, Sunset Farms, Rio Grande Valley Regional Landfill, Gulf West Facility.

- **Other Landfills**
  LCS, (WV), Arden (PA), City of Alice (Alice, TX), Crow Landfill (Dallas, TX), Rollins (Deer Park, TX)

TERRY E. STRANSKY, P.G.

PRINCIPAL / SENIOR PROJECT HYDROGEOLOGIST

A Terracon COMPANY

PROFESSIONAL EXPERIENCE

Mr. Stransky has served as project manager/project geologist for various landfill monitoring and site characterization projects and prepared closure / post closure documents for RCRA regulated facilities.

Mr. Stransky has served as lead investigator and project manager for numerous ASTM-compliant and project-specific Phase I and Phase II Environmental Site Assessments for a variety of commercial and industrial facilities. Mr. Stransky has also performed numerous wetland delineations and subsequent permitting activities in accordance with US Army Corps of Engineers and various state regulatory requirements.

AREAS OF EXPERTISE INCLUDE:

- Wetlands Delineation
- Phase I Environmental Site Assessments
- Phase II Environmental Site Assessments
- Landfill Subsurface Geology Characterizations

PROJECT EXPERIENCE

- **2006 SAR, Inc., Clermont County, Ohio** - Wetland delineation of two forested project sites, a 288-acre site and a 267-acre site.
- **2006 Rosebud Development Company, LLC, Clermont County, Ohio** - Wetland delineation of a forested 24-acre project site.
- **2006 Schuermann Properties, Dayton, Kentucky** - Waters of US Jurisdictional Determination.
- **2008 Schuermann Properties, North Bend Road, Cincinnati, Ohio** - Waters of US Jurisdictional Determination and Corps of Engineers 404 Permit Application.
- **2008 Kroger Co, Indianapolis, Indiana** - Vacant site. Waters of US Jurisdictional Determination.
- **2008 Morningstar Energy Ethanol Plant, Clinton, Indiana** - Preliminary Jurisdictional Determination 300-acre, partly wooded site, and Section 401 Water Quality Certification.
- **2007 Midland Atlantic Properties, Union, Kentucky** - Wetland delineation, a 55-acre agricultural project site.
- **2004 Balke Engineers** -CLE-275/SR32- ODOT-Compliant Environmental Site Assessment Screening, Bells Lane to Stonelick- Olive Branch Road, Clermont County, Ohio. Supervised site reconnaissance and database reviews of numerous properties relative to the presence of hazardous materials along a several-mile long corridor, and reviewed public records relative to 12 identified priority sites. Identified candidate sites for subsurface investigation activities.

EDUCATION

Basic Wetland Delineation Wetlands Training Institute, Seattle, WA 1994

Bachelor of Science, Geology Brooklyn College, 1972

Master of Arts, Geology, Brooklyn College, 1977

REGISTRATIONS

Professional Geologist in Kentucky and Indiana

Ohio Voluntary Action Program (VAP) Certified Professional #CP262

CERTIFICATIONS

Accredited Asbestos Hazard Evaluation Specialist / Inspector / Management Planner in Ohio and Kentucky

OSHA 40-Hour Health & Safety Training

AFFILIATIONS

ASTM Committee E-50 on Environmntal Site Assessments

Association of Environmental and Engineering Geologists

American Association of Petroleum Geologists, Environmental Geoscience Division

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Professional Geologist from 1990 to present

U.S. Army Corps of Engineers Ohio River Division Geotechnical Laboratory, Geologist/ Petrographer from 1977 to 1990

- **US Army Corps of Engineers, Louisville District, MSD Deep Tunnel Project, Cincinnati, Ohio** - Coordinated / Supervised activities of 5 Geologists and other technical personnel during drilling operations carried out over a three month period. Drilling was performed to depths of over 400 feet, and activities including logging of overburden and rock core samples, collection of samples for environmental analyses, photo documentation of samples, and performance of rock mechanics testing (Schmidt rebound and point-load tests) and packer testing.

- **Valley Sanitation Inert Landfill, Jefferson County, Kentucky** - Supervised Hydrogeological Investigation in support of permit application in accordance with 401 KAR 48:308. Prepared groundwater monitoring plan for this facility also in accordance with 401 KAR 48:308.

- **Existing Drum Recycling Facility Louisville, KY** - Reviewed and revised RCRA Closure Plan to comply with Kentucky Division of Waste Management requirements. Prepared Post-Closure Plan for several hazardous waste management units. Assisted in preparation of further hydrogeological site assessment design and scope of work for groundwater monitoring and characterization program.

- **City of Covington, Kentucky** - Project Manager, Kentucky Voluntary Environmental Remediation Program (VERP) project. Supervised several Phase I/Phase II environmental site assessments in support of a Brownfields grant application.

- **Former Junkyard, City of Rising Sun, Indiana** - Prepared scope of work for further site characterization, prepared remedial action plan pursuant to Indiana Department of Environmental Management criteria under the Risk Integrated System of Closure (RISC), and assisted in preparation of bid documents for site remediation.

- **Former Aircraft Parts Manufacturing Facility, New Knoxville, Ohio** - Provided a review of RCRA Facility Investigation Report and assisted in preparation and review of RCRA Closure Plan for Ohio EPA.

- **Third Street Redevelopment (Aquarium Site) City of Newport** - Project manager/lead investigator for evaluation of a 12 square block area slated for demolition. Evaluation included identification of environmental hazards associated with prior site use, underground storage tanks, asbestos containing materials and hazardous waste. Supervised subsurface investigations and removal of underground storage tanks and hazardous wastes associated with automobile repair and painting facilities.

- **Harper Road Landfill** - Loveland, Ohio. Project manager for annual landfill gas and groundwater monitoring program for the City of Loveland. Prepared proposals, supervised monitoring and sampling activities, and prepared annual and quarterly reports in accordance with Ohio EPA requirements.

- **Golsch Construction and Demolition Debris Landfill**, Hooven, Ohio. Project geologist for site characterization portion of permit application. Prepared, implemented, and supervised quarterly groundwater monitoring program in accordance with Ohio EPA/ Hamilton County General Health District Requirements.

- **Xavier University** - Cincinnati, Ohio - Phase II Environmental Site Assessment. Project manager for environmental subsurface investigation for proposed Convocation Center in a former unregulated landfill. Supervised site drilling activities, coordinated analytical work and prepared report of findings, including preparation of a site specific health and safety plan, evaluation of Ohio VAP options, and soil and groundwater treatment/disposal options.

- **Former Schenley Distillery** - Greendale, Indiana - Phase I ESA. Project manager/lead investigator for the evaluation of an abandoned 40-acre distillery facility. Evaluation including identification of hazards associated with asbestos-containing materials, underground storage tanks, and unidentified waste products. Provided cost estimates for associated remedial activities.

KEVIN P. REID, P.G.
SENIOR GEOLOGIST

PROFESSIONAL EXPERIENCE

Mr. Reid has served as a Senior Geologist and project manager providing environmental consulting services for underground storage tank compliance, assessments, closures and remediation; Phase I, II and III, ESAs; RCRA Facility investigations, remediation and closure; wetland assessments; and characterization, manifesting, coordinating and disposal of non-hazardous and hazardous materials/ wastes (solid, liquids, and sludge's). UST experience in the removal process, experience in the tier evaluations for closure and in remediation of UST sites.

AREAS OF EXPERTISE

Environmental Site Evaluations
Underground Storage Tank Compliance
RCRA Facility Investigation and Closure
Phase I/II/III Environmental
Project Management
Water Well and Aquifer Testing
Field Monitoring - Soil, Groundwater, Gases

PROJECT EXPERIENCE

- **Hazardous Waste Landfill Closure, New Knoxville, Ohio** - 1996 to 2007 - Prepared and implemented an OEPA approved Closure Plan including groundwater monitoring plan implementation for a site in Northwest Ohio.

- **New Plant Life, Northern Indiana**, Onsite coordinator and health and safety officer, supervised the removal of approximately 150 abandon hazardous waste drums from the site.

- **Confidential Former Industrial Site, Red Bank Road, Cincinnati, Ohio** - Supervised the performance of a Phase II Environmental Site Assessment (ESA), and supervised sampling of existing monitoring wells, performance of three additional rounds of soil and groundwater sampling. Assisted in the performance of a site-specific risk assessment, based on preliminary site redevelopment plans.

- **Former Junkyard, City of Rising Sun, Indiana** - Prepared scope of work for site characterization, prepared remedial action plan pursuant to Indiana Department of Environmental Management criteria under the Risk Integrated System of Closure (RISC), and assisted in preparation of bid documents for site remediation.

- **2008 Morningstar Energy Ethanol Plant, Clinton, Indiana** - Preliminary Jurisdictional Determination 300-acre, partly wooded site, and Section 401 Water Quality Certification.

EDUCATION

Bachelor of Science, Geology, St. Joseph's College, 1987

Bowling Green State University - 2 years of Graduate Studies

OSHA Health & Safety 8-Hour SupervisoryTraining Course

OSHA Health & Safety 40-Hour Training Course

REGISTRATIONS

State of Indiana - Certified Professional Geologist, 1995

State of Kentucky - Professional Geologist, 1994

CERTIFICATIONS

Commonweath of Kentucky, Certified Contractor, Office of Petroleum Storage Tank Environmental Assurance Fund #1155

State of Indiana Water Well Drilling Licenses

AFFILIATIONS

Office of the Petroleum Storage Tank Environmental Assurance Fund

Society of American Military Engineers (SAME)

Assoication of Environmental Engineering Geologists

National Ground Water Association

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Senior Geologist from 1988 to present

LEWIS E. EPLIN, LRS
PROJECT ENVIRONMENTAL SCIENTIST

Mr. Eplin has been with H.C Nutting, A Terracon Company since June of 2004. During his time with H.C Nutting and past employment, Mr. Eplin has conducted Phase I Environmental Assessments, Subsurface Investgations Sampling and Waste Charactorization Investigations on a wide range of sites. Mr. Eplin has conducted investigations for clients that include private individuals, national companies, lending institutions, and real estate brokers.

Mr. Eplin has experience with sites ranging from single-family residences to industrial sites containing multiple environmental conditions. Based on the findings of many investigations, Mr. Eplin has developed and implemented sampling plans resulting in the elimination or confirmation of concerns.

PROJECT EXPERIENCE

John E. Amos Historic Waste Disposal Area, Winfield, WV
Supervised the test pit exploration and sampling of waste material of an inactive landfill from the 1970s. Identified sampling areas and sampled material for characterization of the waste as hazardous or non-hazardous. Determined waste horizontal and vertical limits.

Former Rail Yard Redevelopment, Elkins, WV
Based on a review of the historical information, the site was utilized as a rail yard from approximately 1880 to 1981 and sold to be used as a business park. The rail yard once contained aboveground and underground petroleum storage tanks, a paint shop, an oil inspection pit, and a locomotive turn table. Assessed the site for chemicals of concern with removal of the soil containing the highest concentrations. As Project Manager and Environmental Professional, I prepared a sampling plan, field boring logs, supervising soil sampling using hollow stem auger methods and report preparation. Analyzed laboratory data evaluating concentrations of contaminants of concern and implemented a remediation plan which resulted in a No further Action Required status from the WVDEP.

HEAVY MACHINERY MANUFACTURING FACILITY, CROSS LANES, WV
During the Phase I of the property RECs were identified related to the manufacturing activities at the facility. The presence of evidence of contamination from oil, solvents and heavy metals over many years was obvious. The refinancing of the facility was eminent and the project shifted quickly to a Phase II ESA. A sampling plan was developed and the contamination was found to be minimal for an industrial site. Financing was approved for the facility.

AUTOMOTIVE DEALERSHIP SERVICE CENTER, CHARLESTON, WV
Mr. Eplin conducted a Phase I ESA of an Automotive Dealership in preparation of a property transaction. Known RECs existed at the site including the historical use of solvents and petroleum products. The site contained aging underground hydraulic lifts; which are a common source of contamination. To expedite the property transaction, limited Phase II sampling was conducted concurrently with the Phase I. Contamination was discovered and the project moved to a delineation phase. The information was evaluated by the parties involved and the property transaction proceeded.

EDUCATION
B.S, Environmental Science-Geology, 2000, Marshall University

CERTIFICATIONS
West Virginia Licensed Remediation Specialist

OSHA 40-Hour HAZWOPER Training

West Virginia Licensed Asbestos Inspector

West Virginia Certified Monitoring Well Driller

WORK HISTORY
CTL Engineering, Environmental Scientist, 2000-2004

H.C. Nutting Company, Project Environmental Scientist, 2004-present

STEPHEN B. NIEHAUS

STAFF ENVIRONMENTAL GEOLOGIST

A Terracon COMPANY

PROFESSIONAL EXPERIENCE

Mr. Niehaus serves as a Staff Environmental Geologist for the H.C. Nutting Company. He is responsible for performing subsurface sampling using traditional hollow stem auger methods and Geoprobe methods. He is experienced in Geoprobe sampling for soil and groundwater. He has also prepared Phase I ESA reports, Phase II ESA reports, and assisted in writing proposals.

PROJECT EXPERIENCE

- **Kentucky Transportation Cabinet / Green County, Kentucky** – Served as drill coordinator/supervisor, as well as performed soil field classification and collecting bag samples for over eight miles of the KY-61 bypass through Greensburg, KY. Also was responsible for the clearing of utilities and acquiring permission to drill from land owners. This was a three month long project.

- **The Kroger Company / Indianapolis, Indiana** – Inspected drilling operations and performed soil classifications for a proposed Kroger gas kiosk. Also collected water samples from selected borings. Also prepared two Phase II ESA reports for this site.

- **Love's Travel Stop / St. Paul, Indiana** – Inspected drilling operations and performed soil classifications in support of a geotechnical study for a proposed truck stop. Also collected water samples from selected borings.

- **Hunt Builders Corps – Fujitec America / Lebanon, Ohio** – Performed Geoprobe soil sampling and soil classification.

- **The Kroger Company / Nora, Indiana** – Performed Geoprobe soil and groundwater sampling and soil classification for a proposed Kroger food store.

- **Murphy Oil USA - Walmart / Ohio** – Performed Geoprobe soil and groundwater sampling and soil classification for multiple sites in Cincinnati and Columbus.

- **IDI – Monroe Expansion Land / Monroe, Ohio** – Inspected drilling operations, monitoring well installations, and performed soil classifications in support of a geotechnical study being performed on site. Developed and sampled monitoring wells.

- **DCI Properties, LLC / Dayton, Kentucky** – Assisted in the collection of CPT data in support of a geotechnical study for new development.

- **D & L Properties of Blue Ash III, LLC / Blue Ash, Ohio** – Prepared Phase I ESA report consisting of reviewing current and historical information, contacting local agencies and reviewing regulatory databases, and performed the site reconnaissance visit.

- **Annuity Real Estate Partners / Blue Ash, Ohio** – Prepared Phase I ESA report consisting of reviewing current and historical information pertaining to the site, contacting local agencies and reviewing regulatory databases, and performed site reconnaissance visit.

EDUCATION

Bachelor of Science, Geology, University of Cincinnati, 2006

OSHA Health and Safety 10-Hour Construction Safety Course

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Senior Environmental Technician from 2007 to present

GINA M. BOSSE

STAFF ENVIRONMENTAL GEOLOGIST

PROFESSIONAL EXPERIENCE

Ms. Bosse serves as a Staff Environmental Geologist for the H. C. Nutting Company. She is responsible for performing subsurface sampling using traditional hollow-stem auger methods, preparing Phase I ESA reports, sampling and development of monitoring wells. She is also experienced in construction materials testing, including soil compaction testing and concrete testing.

PROJECT EXPERIENCE

- **Cannelton Hydroelectric Project / MWH Americas Inc. / Cannelton, Indiana -** Inspected drilling operations and performed overburden and rock core classification and water pressure tests.
- **Willow Island Hydroelectric Project / MWH Americas Inc. / Willow Island, West Virginia -** Inspected drilling operations and performed overburden and rock core classification and water pressure tests.
- **Smithland Hydroelectric Project / MWH Americas Inc. / Smithland, Kentucky -** Inspected drilling operations and performed overburden and rock core classification.
- **Kroger J -500 / Kroger / Indianapolis, Indiana -** Inspected drilling operations and performed overburden classification for environmental purposes
- **Former SOHIO Gas Station / Civic Garden Center / Cincinnati, Ohio -** Inspected drilling and monitoring well installation operations and performed overburden classification for environmental purposes. Also performed development and sampling of monitoring wells
- **Columbia Square Site Development / Al Neyer, Inc. / Cincinnati, Ohio-** Inspected drilling operations and performed overburden classification.
- **Former Kmart LSI / City of Forest Park / Cincinnati, Ohio-** Inspected drilling and monitoring well installation operations and performed overburden classification for environmental purposes. Also performed development and sampling of monitoring wells
- **John P. Parker School / Cincinnati Public Schools / Cincinnati, Ohio-** Performed environmental sampling of water found during excavation of site.
- **Vacant Property on Carrel St / Mesa Industries / Cincinnati, Ohio-** Prepared Phase I ESA report, consisting of reviewing historical and current information, contacting local agency and performed site reconnaissance visit.
- **Technology Court / Miller Valentine / Beavercreek, Ohio-** Prepared Phase I ESA report, consisting of reviewing historical and current information, contacting local agency and performed site reconnaissance visit.

EDUCATION

Bachelor of Science, Geology, Northern Kentucky University, 2007

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Staff Environmental Geologist from August 2007 to present

DERON BUCHANAN

GEO-ENVIRONMENTAL ENGINEERING AIDE

PROFESSIONAL EXPERIENCE

Mr. Buchanan is experienced in landfill construction from new cell to landfill closure, leachate collection systems, landfill gas systems. Has extensive experience with geosynthetic membrane installation, (verification, testing and inspection); controlled soil fill placement, compaction testing and inspection; excavated foundation examination; and geotechnical and geosynthetic laboratory testing.

LIST OF PROJECT EXPERIENCE LOCATIONS

- Beech Hollow Landfill, Wellston, Ohio
- Brown County Landfill, Georgetown, Ohio
- Cincinnati Water Works, Polishing Pond Liner, Fairfield, Ohio
- Countywide Landfill, East Sparta, Ohio
- ELDA Landfill, Cincinnati, Ohio
- Pike Sanitation Landfill, Waverly, Ohio
- Pine Grove Landfill, Amanda, Ohio
- Piketon Gaseous Diffusion Plant, Piketon, Ohio
- Stony Hollow Landfill, Dayton, Ohio
- Suburban Landfill, Brownsville, Ohio

- Blue Grass Army Depot, Richmond, Kentucky
- Blue Ridge Landfill, Irvine, Kentucky
- Dow Corning, Carrollton, Kentucky
- Outer Loop Landfill, Louisville, Kentucky
- Pendleton County Landfill, Butler, Kentucky

- Black Foot Landfill, Winslow, Indiana
- Interim Storage Facility, Bloomington, Indiana
- Prairie View Landfill, South Bend, Indiana
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- Eagle Valley Landfill, Orion, Michigan
- Van Buren Landfill, Wayne, Michigan
- Westside Landfill, Three Rivers, Michigan
-
- Arden Landfill, Washington, Pennsylvania
- Mountain View Reclamation Facility, Greencastle, Pennsylvania
- Tullytown Landfill, Tullytown, Pennsylvania
-
- Bradley Landfill, Sun Valley, California
- Central Disposal Facility, Pompano Beach, Florida
- Columbia Ridge Landfill, Arlington, Oregon

EDUCATION

Cincinnati Technical College, Cincinnati, Ohio 1989 - 1991

University of Cincinnati, Cincinnati, Ohio 1988 - 1989

CERTIFICATIONS

Nuclear Density Gauge Operator - Nuclear Regulatory Commission

Occupational Safety & Health Administration (OSHA) - 40 hour Health & Safety Training

OSHA -30 hour Site Supervisor Training (OSHA 510)

NICET Certified

Level III Geotechnical Engineering Technology

Level II Geosynthetics Installations

ACI Level 1 Concrete

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Geo-Environmental Engineering Aide 1997, 2000 to present

EarthTech, 1997 - 2000

Rust E & I, 1990 - 1997

JOSEPH KRUGER
GEO-ENVIRONMENTAL ENGINEERING AIDE

PROFESSIONAL EXPERIENCE

Mr. Kruger is experienced in landfill construction from new cell to landfill closure, leachate collection systems, landfill gas systems. Has extensive experience with geosynthetic membrane installation, (verification, testing and inspection); controlled soil fill placement, compaction testing and inspection; excavated foundation examination; and geotechnical and geosynthetic laboratory testing.

LIST OF PROJECT EXPERIENCE LOCATIONS

- Brown County Landfill, Rumpke Waste, Inc., Georgetown, Ohio
- Beech Hollow Landfill, Rumpke Waste, Inc., Waverly, Ohio
- Countywide Landfill, Canton, Ohio
- Feed Materials Production Center, Fernald, Ohio
- Pike Sanitation Landfill, Waverly, Ohio
- Skinner Landfill, West Chester, Ohio

- Blue Ridge RDF, Irvine, Kentucky
- Outer Loop RDF, Louisville, Kentucky

- Erskine-Commons, South Bend, Indiana
- Danville Landfill, Indianapolis, Indiana
- Oak Ridge Landfill, Indianapolis, Indiana

- Autumn Hills Landfill, Cell 12, Holland, Michigan
- Cedar Ridge RDF, Charlevoix, Michigan
- Independent Landfill, Muskegon, Michigan
- Northern Oaks RDF, Harrison, Michigan
- Woodland Meadows Landfill, Wayne, Michigan
- Venice Park RDF, Lennon, Michigan
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- Arden Sanitary Landfill, Washington, Pennsylvania
- Mountain View Reclamation, New Castle, Pennsylvania

- Piedmont Landfill, Kernersville, North Carolina
- Superior Landfill, Savannah, Georgia
- Live Oak Landfill, Atlanta, Georgia
- Black Oak Landfill, Springfield, Missouri
- Page Landfill, Page, Arizona

EDUCATION

University of Cincinnati in Cincinnati, Ohio 1981

CERTIFICATIONS

Nuclear Density Gauge Operator - Nuclear Regulatory Commission

Occupational Safety & Health Administration (OSHA) - 40 hour Health & Safety Training

OSHA -30 hour Site Supervisor Training (OSHA 510)

WORK HISTORY

H. C. Nutting Company, A Terracon Company, Geo-Environmental Engineering Aide, 2004 to present

EarthTech, 2000 - 2004

SCS Engineers, 1999 - 2000

Rust E & I, 1990 - 1999