NM - 22

MONITORING REPORTS

PROPOSAL

YEAR(S):

JAN 26, 2001

ETGI BID PROPOSAL

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

NEW MEXICO OIL CONSERVATION DIVISION

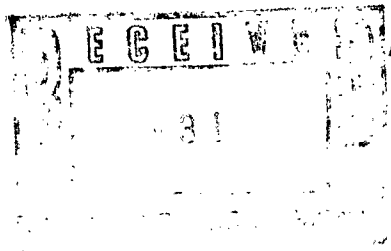
INVESTIGATION, CLEANUP AND ENVIRONMENTAL REMEDIATION

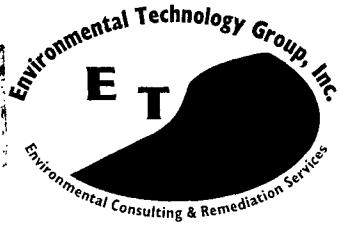
GOODWIN TREATING PLANT

HOBBS, NEW MEXICO

JANUARY 2001

Midland, TX ■ P. O. Box 4845, 79704 ■ Office 915-522-1139 ■ Fax 915-520-4310
The Woodlands, TX ■ P. O. Box 131150, 87393 ■ Office (281) 362-8571 ■ Fax 281-362-8932





January 26, 2001

Ms. Martyne J. Keiling
New Mexico Oil Conservation Division
1220 S. Saint Frances
Santa Fe, New Mexico 87505

RE: Goodwin Treating Plant Cleanup Proposal Letter of Transmittal

Environmental Technology Group, Inc. (ETGI), 2540 W. Marland Blvd., Hobbs, NM 88240, (505) 397-4882, submits the following proposal for the investigation, cleanup and environmental remediation at the Goodwin Treating Plant. The plant is located in the SW/4 NW/4 of Section 31, T18S, R37E, Lea County, New Mexico.

Jesse Taylor, Principal/Geologist, is hereby authorized to contractually obligate ETGI on this project. Jesse Taylor, Principal/Geologist, (505) 397-4882, is hereby authorized to negotiate the contract on behalf of ETGI. Jesse Taylor, Principal/Geologist and Beth Aldrich, Sr. Project Manager/Geologist may be contacted for clarifications of the contract.

ETGI accepts the Conditions Governing the Procurement of the contract stated in Section II of this Request for Proposal (RFP). ETGI acknowledges receipt of this RFP and any and all amendments and will acknowledge any and all future amendments to this RFP.
If you have any questions, please contact Jesse Taylor or Beth Aldrich at (505) 397-4882.
Thank you for the opportunity to bid this project.

Sincerely,

Jesse Taylor
Principal/Geologist

Beth Aldrich
Sr. Project Manager/Geologist

Cc: Jerry Nickell, President, ETGI-Midland
Lee Hobbs, CFO, ETGI -Midland

PROPOSAL SUMMARY

GOODWIN TREATING PLANT
LEA COUNTY, NEW MEXICO

Prepared For:
New Mexico Oil Conservation Division
Martyne J. Kieling
1220 S. Saint Frances
Santa Fe, NM 87505

Prepared By:
Environmental Technology Group, Inc.
2540 West Marland Blvd.
Hobbs, New Mexico 88240

January 26, 2001

PROPOSAL SUMMARY
GOODWIN TREATING PLANT
Lea County, New Mexico
January 26, 2001
Prepared By:
ETGI

INTRODUCTION

Environmental Technology Group, Inc. (ETGI) hereby submits this Proposal Summary to the EMNRD-OCD as a summary of the Technical Specifications and Business Specifications Responses for the Request for Proposals (RFP) on the investigation, cleanup and environmental remediation at the Goodwin Treating Plant (GTP), SW/4 NW/4 Section 31, T18S, R37E, Lea County, New Mexico site.

FACILITY BACKGROUND

The Goodwin Treating Plant was closed, by order of the State of New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division (EMNRD-OCD), on March 26, 1996. The plant was inactive for a period in excess of six consecutive months prior to that date. Prior activities at the site included storage and treatment of produced water, oil, etc. The GTP was a "tank only" facility, and was not permitted to dispose of surface waste of any kind.

PROJECT PLAN SUMMARY

ETGI proposes to conduct the demolition and removal of all buildings, foundations, tanks, equipment, trash and junk from the GTP facility and recycle/dispose of the materials in a manner approved by the EMNRD-OCD. ETGI proposes to remove all oilfield products, wastes and NORM contaminated materials at the site and recycle/dispose of these materials at an EMNRD-OCD approved facility.

ETGI proposes to conduct the drilling of an investigative boring and install a groundwater monitoring well in this boring at the site. The monitoring well will be installed within the emergency overflow pit, located at the southeast corner of the site. The depth to groundwater within this area is 45 to 60 feet. During the boring installation, soil samples will be collected at three to five feet below ground surface (bgs), then at ten-foot intervals to total depth. Samples will be collected with a split spoon sampler except in those locations containing indurated materials. Soil samples collected will be field screened and submitted for laboratory analysis at an EMNRD-OCD approved laboratory as per specifications set forth in the RFQ.

The borehole will be completed as a 2-inch ground water monitoring well in accordance with EMNRD-OCD guidelines and specifications set forth on the RFQ. The monitoring well will be developed, purged and sampled in accordance with EMNRD-OCD guidelines, utilizing EPA approved methods. As required by NMOCD Rule 19.B and as specified in this RFQ, the groundwater sample will be submitted for analyses using EPA approved methods and quality assurance/quality control (QA/QC) procedures.

All waste in the tanks, treaters and associated stockpiles will be surveyed for NORM in accordance with NMOCC Order R-10609. If a field reading over 50 microrentgens per hour is obtained, a representative sample will be submitted to an EMNRD-OCD approved laboratory for Radium 226 analysis. If the laboratory analysis for a sample exceeds 30 picocuries per gram, the represented waste will no longer be considered exempt and will be treated as Regulated NORM. Materials identified as Regulated NORM will be removed by a NM Radiation Licensing Bureau approved remediation contractor and disposed of at the NORM disposal facility located in Andrews County, Texas, operated by Lotus LLC All associated tanks and treaters will be remediated to below regulatory action levels and disposed of at an EMNRD-OCD approved waste management facility or recycler.

All non-NORM contaminated material in the tanks will be removed and remediated via landfarming at the EMNRD-OCD approved waste management facility, Rhino Environmental Services land farm facilities located in Lea County, New Mexico. All onsite tanks, vessels, piping, catwalks, equipment and debris will be removed and recycled/disposed of at an EMNRD-OCD approved facility.

On completion of tank remediation and disposal of onsite vessels and debris, extent of TPH, BTEX and chloride contamination will be investigated in the soil beneath each tank, sump and treater, as well as within the tank bottom soil pile. Soil samples will be collected, field screened and submitted for laboratory analysis of TPH, BTEX and chloride concentrations as per the RFP specifications.

Surface contaminated soils in excess of 100ppm TPH, 50ppm BTEX and 10ppm Benzene will be removed and transported to the EMNRD-OCD approved waste management facility, Rhino Environmental Services, for remediation via landfarming. The excavated area will be backfilled with clean soil backhauled from the same EMNRD-OCD approved waste management facility used for landfarming. The clean soils will be stockpiled onsite until backfilling of the excavated areas is begun. The backfilled areas will be contoured to provide positive runoff and will be revegetated following EMNRD-OCD approved methods.

A Phase 1 report will be submitted to the EMNRD-OCD to document completion of activities in RFQ Section V, Paragraph A.1 through 3. A Phase 2 report will be submitted to the EMNRD-OCD to document completion of activities in RFQ Section V, Paragraph A.4 and 5. A Phase 3 report will be submitted to the EMNRD-OCD to document completion of activities in RFQ Section V, Paragraph A.6 through 11.

PROJECT TIMELINE

February 23, 2001	Approximate Contract effective date Begin contract work
March 15-30, 2001	Conduct NORM survey of Site Conduct soil boring and installation of monitoring well Complete Phase 1 Report
April 1 – May 30, 2001	Remove and dispose of all non-NORM contaminated materials; Remove and dispose of all NORM contaminated materials Complete Phase 2 Report
May 15 – June 15, 2001	Remove vessels, structures, piping debris from site
June 15 – July 15, 2001	Investigate/remove impacted soils; Backhaul clean soils

July 15 – August 15, 2001	Backfill excavation, contour site, revegetate site Complete Phase 3 Report

OFFEROR BACKGROUND

Environmental Technology Group, (ETGI), has offices in Hobbs, New Mexico, as well as Houston, Texas and corporate offices in Midland, Texas. Our company provides a wide range of environmental services, from assessment and professional consulting activities to onsite supervision and remediation of impacted soils and groundwater.

ETGI provides remediation services from soil and groundwater sampling and field analysis to subsurface investigation via Geo-probe and Air Rotary Drilling Rig. ETGI has a patented Deep Remediation Injection System for subsurface chemical remediation injection projects.

Our staff is highly diversified - geologists, engineers, microbiologists, drillers, technicians. Our staff has expertise in projects ranging from ongoing oilfield soil and groundwater investigation and remediation projects in New Mexico and Texas, chemical oxidation remediation projects in Wyoming, New Mexico, Utah and Texas, Superfund, ALUST, UST remediation projects in Colorado, Wyoming, New Mexico and Texas and site assessments in New Mexico, Texas, Colorado and Wyoming. Please refer to our Statements of Qualifications in the Addenda for further experience and information on our staff.

ETGI is currently managing projects for several oilfield clients in Texas and New Mexico as well as industrial clients in Texas and Wyoming, the state of Wyoming Department of Environmental Quality and the Navajo Nation EPA.

The Hobbs, New Mexico offices of ETGI is currently seeking licensure with the state of New Mexico Environment Department for Registration to provide Radiological Services.

SUBCONTRACTORS

ETGI has solicited pricing for items in the RFQ from the following subcontractors:

American Radiation Services, Inc., Baton Rouge, Louisiana
Anachem Laboratories, Albuquerque, New Mexico
Cardinal Laboratories, Hobbs, New Mexico
Environmental Laboratory of Texas, Odessa, Texas
Fluid Transports, Inc., Snyder, Texas
Hobbs Iron and Metal, Hobbs, New Mexico
Lotus LLC, Andrews, Texas
MALCO Trucking, Odessa, Texas
Newpark Environmental Services, Lafayette, Louisiana
Rhino Environmental Services, Hobbs, New Mexico
Safety & Environmental Solutions, Inc., Hobbs, New Mexico
Sundance Services, Eunice, New Mexico
Trace Analysis Laboratories, Lubbock, Texas

Solicitation of prices does not constitute inclusion in the actual project. ETGI will only use licensed and EMNRD-OCD approved subcontractors for this project.

RESPONSE TO TECHNICAL SPECIFICATIONS

GOODWIN TREATING PLANT
LEA COUNTY, NEW MEXICO

Prepared For:
New Mexico Oil Conservation Division
Martyne J. Kieling
1220 S. Saint Frances
Santa Fe, NM 87505

Prepared By:
Environmental Technology Group, Inc.
2540 West Marland Blvd.
Hobbs, New Mexico 88240

January 26, 2001

RESPONSE TOTECHNICAL SPECIFICATIONS
GOODWIN TREATING PLANT
Lea County, New Mexico
January 26, 2001
Prepared By:
ETGI

INTRODUCTION

Environmental Technology Group, Inc. (ETGI) hereby submits this Response to the Technical Specifications to the State of New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division (EMNRD-OCD) for the investigation, cleanup and environmental remediation at the Goodwin Treating Plant (GTP), SW/4 NW/4 Section 31, T18S, R37E, Lea County, New Mexico site. This response will serve as a "Work Plan" for the activities at the Goodwin site. One regulatory basis for this work plan is the August 1993 OCD Guidelines for Remediation of Leaks, Spills, and Releases as well as other EMNRD guidelines and specifications provided in the Request For Proposals.

BACKGROUND

The Goodwin Treating Plant was closed, by order of the EMNRD-OCD, on March 26, 1996. The plant was inactive for a period in excess of six consecutive months prior to that date. Prior activities at the site included storage and treatment of produced water, oil, etc. The GTP was a "tank only" facility, and was not permitted to dispose of surface waste of any kind.

PURPOSE OF INVESTIGATION

As required by the EMNRD-OCD in their Request for Proposal, dated December 11, 2000, removal of equipment and surface contamination, investigation of the extent of subsurface soil and ground water contamination and remediation/restoration of the GTP in accordance with the rules of the EMNRD-OCD is necessary.

METHODOLOGY

ETGI proposes to conduct the demolition and removal of all buildings, foundations, tanks, equipment, trash and junk from the GTP facility and recycle/dispose of the materials in a manner approved by the EMNRD-OCD. ETGI proposes to remove all oilfield products, wastes and NORM contaminated materials at the site and recycle/dispose of these materials at an EMNRD-OCD approved facility.

ETGI proposes to conduct the drilling of an investigative boring and install a groundwater monitoring well in this boring at the site. The monitoring well will be installed within the emergency overflow pit, located at the southeast corner of the site. The depth to groundwater within this area is 45 to 60 feet. During the boring installation, soil samples will be collected at three to five feet below ground surface (bgs), then at ten-foot intervals to total depth. Samples will be collected with a split spoon sampler except in those locations containing indurated materials. A sample from each interval will be field screened with a photo ionization detector (PID) and a continuous lithologic log of the penetrated section will be maintained and recorded. A sample from each interval will be

transported under Chain of Custody to an ENMRD-OCD approved laboratory for chloride analysis.

Additionally, the sample from the three to five feet bgs interval, the bottom hole sample and the sample from the interval with the highest field PID reading will be taken under Chain of Custody to an EMNRD-OCD approved laboratory for total petroleum hydrocarbons (TPH) and Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) analysis.

The borehole will be completed as a 2-inch ground water monitoring well in accordance with EMNRD-OCD guidelines. The monitoring well will have at least 15 feet of well screen, with 5 feet of well screen above the water table and 10 feet below the water table. Gravel pack will be inserted within the well annulus around the well screen from the bottom of the hole to two to three feet above the top of the well screen. A two to three foot bentonite plug will be placed above the gravel pack. The well annulus will be grouted to surface. The monitoring well will be completed with a concrete pad at surface, surrounding the well, with a locking well cover.

The monitoring well will be developed in accordance with NMOCD guideline part V.C.3, utilizing EPA approved methods. The fluid level will be measured within $1/100^{th}$ of a foot then purged and sampled in accordance with the NMOCD guideline part V.C.4. As required by NMOCD Rule 19.B and this RFQ, the groundwater sample will be submitted for analyses identified below using EPA approved methods and quality assurance/quality control (QA/QC) procedures.

All waste in the tanks, treaters and associated piles will be surveyed for NORM in accordance with NMOCC Order R-10609. If a field reading over 50uR/hr is obtained, a representative sample will be submitted to an EMNRD-OCD approved laboratory for Radium 226 analysis. If the laboratory analysis for a sample exceeds 30 picocuries per gram, the represented waste will no longer be considered exempt and will be treated as Regulated NORM. Materials identified as Regulated NORM will be removed by a NM Radiation Licensing Bureau approved remediation contractor and disposed of at an NORM disposal facility, such as Lotus LLC or Newpark Resources. All associated tanks and treaters will be remediated to below regulatory action levels and disposed of at an EMNRD-OCD approved waste management facility or recycler.

All non-NORM contaminated material in the tanks will be removed and remediated via landfarming at an EMNRD-OCD approved waste management facility, such as Rhino Environmental land farm facilities. All onsite tanks, vessels, piping, catwalks, equipment and debris will be removed and recycled/disposed of at an EMNRD-OCD approved facility.

On completion of tank remediation and disposal of onsite vessels and debris, extent of TPH, BTEX and chloride contamination will be investigated in the soil beneath each tank/ sump and treater as well as within the tank bottom soil pile. Soil samples will be taken from the bottom of each excavation and/or beneath each sump/tank location. Field PID readings will be utilized as a screening tool. The soil sample from the highest field PID reading location in each excavation or tank/sump location will be sent for laboratory analysis of TPH, BTEX and chloride concentrations.

The surface contaminated soils in excess of 100ppm TPH, 50ppm BTEX and 10ppm Benzene will be removed and transported to an EMNRD-OCD approved waste

management facility for remediation via landfarming. The excavated area will be backfilled with clean soil backhauled from the same EMNRD-OCD approved waste management facility used for landfarming. The clean soils will be stockpiled onsite until backfilling of the excavated areas is begun. The backfilled areas will be contoured to provide positive runoff and will be revegetated following EMNRD-OCD approved methods.

ANALYSES

All soil samples submitted for analysis will be analyzed for Chlorides using EPA Method 310. The soil samples taken from the three to five foot bgs interval, the bottom hole and the sample with the highest field PID reading will be analyzed for TPH using EPA Method 418.1 and for Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) analysis using EPA Method 8021B.I

The groundwater sample will be submitted for the following analysis:

- BTEX (EPA Method 8021B and 5030)
- Major Cations and Anions – EPA Methods 375.4, 325I.3 and 310
- Total Dissolved Solids (TDS) – EPA Method 160.1
- Polycyclic Aromatic Hydrocarbons (PAH) – EPA Method 8270C, 3510
- New Mexico Water Quality Control Commission (NMWQCC) Metals – EPA Method 6010B, 7470

ADDITIONAL ACTIVITIES

A Phase 1 report will be submitted to the EMNRD-OCD to document completion of activities in RFQ Section V, Paragraph A.1 through 3. A Phase 2 report will be submitted to the EMNRD-OCD to document completion of activities in RFQ Section V, Paragraph A.4 and 5. A Phase 3 report will be submitted to the EMNRD-OCD to document completion of activities in RFQ Section V, Paragraph A.6 through 11.

RESPONSE TO BUSINESS SPECIFICATIONS

GOODWIN TREATING PLANT
LEA COUNTY, NEW MEXICO

Prepared For:
New Mexico Oil Conservation Division
Martyne J. Kieling
1220 S. Saint Frances
Santa Fe, NM 87505

Prepared By:
Environmental Technology Group, Inc.
2540 West Marland Blvd.
Hobbs, New Mexico 88240

January 26, 2001

RESPONSE TO BUSINESS SPECIFICATIONS
GOODWIN TREATING PLANT
Lea County, New Mexico
January 26, 2001
Prepared By:
ETGI

INTRODUCTION

Environmental Technology Group, Inc. (ETGI) hereby submits this Response to the Business Specifications to the State of New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division (EMNRD-OCD) Request for Proposals (RFQ), for the investigation, cleanup and environmental remediation at the Goodwin Treating Plant (GTP), SW/4 NW/4 Section 31, T18S, R37E, Lea County, New Mexico site.

ACCEPTANCE

ETGI has examined all contract documents and accepts the contract documents and its terms as received from the EMNRD-OCD. Acceptance of the terms required by this RFQ is provided in the Letter of Transmittal signed by Mr. Jesse Taylor, Principal Geologist, in a previous section of this proposal. Any additional terms and conditions that ETGI places on this proposal will be addressed in Section 6 of this proposal, *Offeror's Additional Terms and Conditions.*

OFFER AMOUNT

GOODWIN TREATING PLANT
LEA COUNTY, NEW MEXICO

Prepared For:
New Mexico Oil Conservation Division
Martyne J. Kieling
1220 S. Saint Frances
Santa Fe, NM 87505

Prepared By:
Environmental Technology Group, Inc.
2540 West Marland Blvd.
Hobbs, New Mexico 88240

January 26, 2001

OFFER AMOUNT
GOODWIN TREATING PLANT
Lea County, New Mexico
January 26, 2001
Prepared By:
ETGI

	TECHNICAL SPECIFICATION	ITEM COST
1.	Sub-surface contamination investigation based on air rotary	$ 3000.00
2.	Well Completion based on 60 foot well	$ 1000.00
3.	Groundwater sampling and analysis	$ 1000.00
4.	NORM Requirements	$14000.00
5.	NORM Survey and lab analysis	$ 3000.00
6.	Tank fluid removal and disposal	$11000.00
7.	Tank solids removal and disposal	$22000.00
8.	Tank and Equipment removal	$40000.00
9.	Near-surface contamination investigation based on lab 35 samples	$10000.00
10.	Contaminated soil removal based on 1450 cyd	$40000.00
11.	Backfilling excavations with back-hauled clean soil	$15000.00
12.	Phase 1 Report	$ 2000.00
13.	Phase 2 Report	$ 2000.00
14.	Phase 3 Report	$ 4000.00
	Total:	$168000.00
	NM Gross Receipts Tax:	$ 10800.00
	Total Turnkey Cost:	**$178800.00**

SUPPLEMENTAL RATE

DESCRIPTION OF SERVICE	RATE PER	UNIT
Air Rotary rig equipped to perform all work Set out in technical specifications	$200.00	hour
Bentonite pellets	$0.50	pound
Blank 2 inch PVC riser	$3.00	foot
Move-in, move-out charges	$100.00	hour
Water truck – capacity__70bbl	$57.00	hour
Backhoe – minimum hours if applicable____	$40.00	hour
Trackhoe – minimum hours if applicable____	$80.00	hour
Dozer – minimum hours if applicable____	$75.00	hour
Trucking – minimum hours if applicable____	$50.00	hour
Front end loader – min. hours if applicable____	$70.00	hour
Senior scientist	$85.00	hour
Environmental Technician	$45.00	hour
Certified NORM technician/scientist	$50.00/100.00	hour
Labor	$18.00	hour
Photo Ionization Detector (PID)	$50.00	day
Chloride Laboratory Analysis	$12.00	per analysis
TPH Laboratory Analysis	$40.00	per analysis
BTEX Laboratory Analysis	$40.00	per analysis
Contaminated soil offsite landfarm remediation	$16.00	per cubic yard
Back-haul clean soil	$4.00	per cubic yard
NORM contaminated soil offsite disposal Include trucking cost	$825.00	per cubic yard
Produced water and non-NORM liquids disposal	$2.75	per barrel

OFFEROR'S ADDITIONAL TERMS AND CONDITIONS

GOODWIN TREATING PLANT
LEA COUNTY, NEW MEXICO

Prepared For:
New Mexico Oil Conservation Division
Martyne J. Kieling
1220 S. Saint Frances
Santa Fe, NM 87505

Prepared By:
Environmental Technology Group, Inc.
2540 West Marland Blvd.
Hobbs, New Mexico 88240

January 26, 2001

OFFEROR'S ADDITIONAL TERMS AND CONDITIONS
GOODWIN TREATING PLANT
Lea County, New Mexico
January 26, 2001
Prepared By:
ETGI

INTRODUCTION

Environmental Technology Group, Inc. (ETGI) hereby submits these additional terms and conditions to the EMNRD-OCD as an addendum to the offer proposal for the investigation, cleanup and environmental remediation at the Goodwin Treating Plant (GTP), SW/4 NW/4 Section 31, T18S, R37E, Lea County, New Mexico site.

ADDITIONAL TERMS AND CONDITIONS

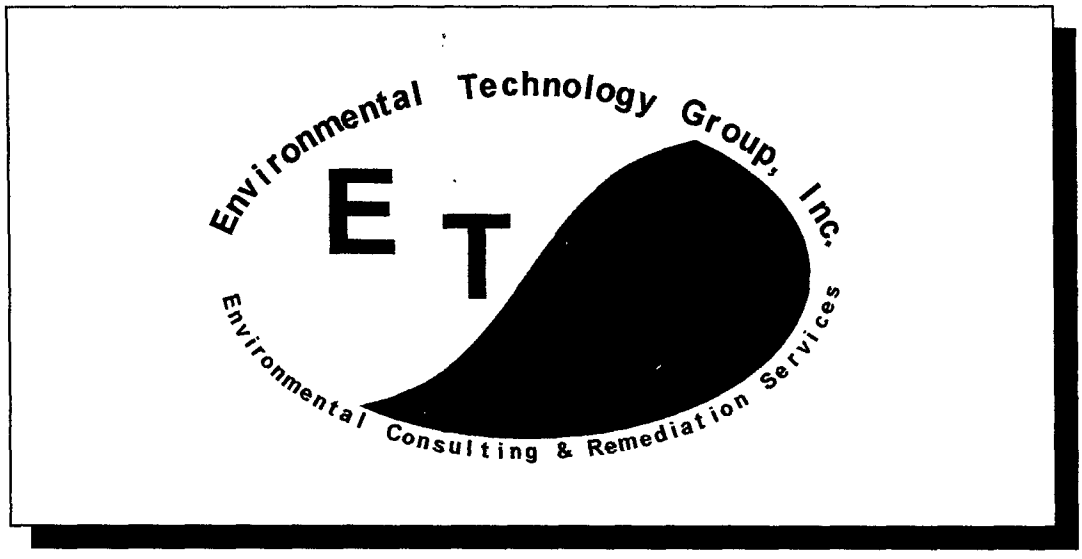
ETGI is pleased to provide the offer amount is Section 5, *Offer Amount*, for the GTP Request for Proposal (RFP). Our offer amount is based on the specifications provided in the RFP with the following additional terms and conditions:

1. On completion of an additional NORM survey of the tanks, treaters and soil piles onsite and confirmatory analysis for Radium 226, additional materials may be classified as Regulated NORM. In this instance, additional cost will be incurred in the removal and disposal of the additional NORM.

2. All charges for per diem and mileage will be assessed as the New Mexico Department of Finance and Administration Rule 95-1 Regulations Governing The Per Diem and Mileage Act.

3. This proposal is based on the assumption that the RFP estimated of onsite contaminated soil is equal to 1450cubic yards as stated. If the subsurface investigation determines that this value is inaccurate, the bid price will change accordingly.

Statement of Qualifications



Environmental Technology Group, Inc.

Midland, Texas 79701
(915) 522-1139

Houston, Texas 77381
(281) 362-8571

Hobbs, New Mexico 88242
(505) 397-4882

INTRODUCTION

Environmental Technology Group (Environmental Technology) is an environmental remediation and consulting firm that is dedicated to providing high-quality, timely, and cost-effective services that meet or exceed our clients' needs. Environmental Technology maintains a fully staffed resource centers in Houston, Texas, Midland/Odessa, Texas and Hobbs, New Mexico. With these resource centers, each office is able to provide expertise in the various areas of environmental consulting and remediation. In addition, the resource centers allow Environmental Technology to achieve cost savings that are passed on to our clients.

Environmental Technology recognizes the standards of performance required by our clients and meets these standards by:

- ◊ ***Employing Highly-Skilled and Technically-Competent Personnel:*** Environmental Technology's experienced technical staff bring diverse environmental experience to our resource center concept, providing a wide range of high-quality services typically found at larger firms.

- ◊ ***Providing Customized Services:*** As a growing firm, Environmental Technology has the flexibility to customize our services to match our clients' needs. Our involvement can range from complete management of a complex project to assisting with limited aspects of a client-led project, depending on the client's needs and in-house capabilities. Through customized service, Environmental Technology can provide timely solutions to each of our clients' environmental concerns.

- ◊ ***Involving Senior Staff:*** At Environmental Technology, experienced senior staff members are active in day-to-day project work. Project proposals from larger firms often include impressive resumes of senior staff, but once the project is awarded, the senior team members identified in the proposal have only minimal involvement in the work. This is not the case at Environmental Technology. The senior professionals identified in our proposals are actively involved in completing the project.

- ◊ ***Developing Cost-Effective Solutions:*** Environmental Technology continually explores new cost-effective solutions that meet our clients' needs. Our resource center concept was developed so that Environmental Technology would operate with less overhead and a more competitive cost structure than our competitors. The savings realized by Environmental Technology through reduced overhead costs are passed directly to our clients in the form of lower consulting rates.

- ◊ ***Strong Relationship with Regulatory Agencies:*** Environmental Technology has a strong working relationship with the local, state, and federal regulatory agencies. Our reputation for quality work and in-depth knowledge of regulatory requirements enhances our ability to assist in regulatory negotiations on behalf of our clients.

Environmental Technology provides the following consulting services:

- ◊ Environmental Site Assessments
- ◊ Environmental Site Investigation and Characterization
- ◊ Soil and Groundwater Remediation and Consulting
- ◊ Underground Storage Tank (UST) Removals and Remediation
- ◊ Risk-Based Corrective Actions
- ◊ RCRA Facility Investigations
- ◊ Bioremediation
- ◊ Environmental Construction and Remediation Oversight
- ◊ Regulatory Compliance and Permitting
- ◊ Wastewater Treatment System Design, Installation, and Maintenance
- ◊ Air Permitting

In addition to the wide range of our consulting services, Environmental Technology has developed a patented remediation delivery system. The system allows for the in-situ treatment of soil and ground water. The Deep Remediation Injection System (DRIS) provides access to subsurface soils that prove difficult to treat through conventional remediation technology. The DRIS is able to access areas beneath underground storage tanks, building foundations, roadways, and rail road tracks. The DRIS is also capable of improving the efficiency of existing in-situ and ex-situ remediation systems. A brochure detailing the capabilities of the DRIS is included at the end of this Statement of Qualifications.

SUMMARY OF SERVICES

Environmental Site Assessments

Environmental Technology Group, Inc. (Environmental Technology) has extensive experience conducting environmental site assessments (ESAs). Our experience ranges from single undeveloped sites to conducting due diligence for industrial, multi-site/multi-million dollar corporate acquisitions. Our strengths lie in our ability to cost-effectively mobilize qualified personnel from each of our offices to execute ESAs nationwide under the stringent time constraints commonly associated with large-scale acquisitions and during complex property transactions.

Environmental Site Investigation and Characterization

Environmental Technology employs a wide range of professionals including engineers, geologists, hydrogeologists, microbiologist and scientists who are experienced in conducting site investigations and characterizations. By interacting with our clients to establish project-specific goals and objectives, Environmental Technology develops site-specific Scopes of Work in accordance with the guidelines of the relevant regulatory agencies. Environmental Technology has developed and successfully executed screening-level remedial investigations/risk assessment approaches to support informed, site-specific, risk-based investigative decision criteria.

Soil and Groundwater Remediation and Consulting

Environmental Technology has successfully completed soil and groundwater remediation projects across the United States. To execute soil and groundwater remediation projects, our regional offices are supported by hydrogeologists, geologists, microbiologist, risk assessment specialists, engineers, and compliance specialists based at our Houston, Texas resource center. These individuals are experienced in the various aspects of site remediation including:

- Permitting
- Regulatory Negotiations
- Interim Remedial Actions
- Feasibility Studies
- Remedial System Design
- Groundwater Remediation
- Soil Remediation
- Construction Management
- Operation and Maintenance
- Risk-Based Corrective Action

Through proper project planning and by efficiently executing the initial phases of site investigation and characterization, Environmental Technology is ready to initiate site remediation, if necessary, when most consultants are still studying the problem. Environmental Technology continues this approach through remediation, resulting in timely execution and cost-effective remedial actions and closures.

Risk-Based Corrective Actions

Environmental Technology's risk assessment specialists have performed risk assessments under the Resource Conservation Recovery Act (RCRA) and state guidance including the Texas Risk Reduction Standards. A critical part of our experience is in negotiating favorable risk assessment parameters and criteria on behalf of our clients. Using approaches similar to the American Society for Testing Materials' recently developed Risk-Based Corrective Action (RBCA) guidance, Environmental Technology has eliminated many of our clients sites from unnecessary investigation and remediation.

In addition, by utilizing our extensive experience with *in-situ* remediation and our patented DRIS technology, Environmental Technology has remediated sites with soil and/or groundwater impact from levels that could have required engineering controls, post-closure monitory or deed encumbrance, to levels which allowed a risk-based closure of the site without these requirements.

RCRA Facility Investigations

Environmental Technology does not believe that corrective action is research action. To be effective, a corrective action program is focused, concise, and flexible. EPA understands this goal and Environmental Technology employs the EPA's final guidance document for conducting corrective action (RCRA Corrective Action Plan, OSWER Directive 9902, 3-2A May 31, 1994) (RCRA CAP Guidance) in developing RCRA Facility Investigations (RFIs). Environmental Technology utilizes a phased approach for conducting RFIs and believes in establishing risk-based decision criteria prior to commencing remedial activities. Source and release sampling and analysis of solid waste management units (SWMUs) is then conducted as the initial phase of the RFI. The data collected during the initial phase and each subsequent phase are then compared with the risk-based criteria and decisions are made as to the scope and necessity of subsequent investigations and/or remediation. By utilizing this approach to the RCRA CAP process when conducting RFIs, Environmental Technology RCRA specialists have saved our clients considerable time and money over more traditional approaches.

Bioremediation

Environmental Technology has extensive experience performing both in-situ and ex-situ bioremediation projects for both soil and groundwater. Our bioremediation capabilities are detailed in the separate Bioremediation section of this Statement of Qualifications, in the Project Summaries, and in our attached DRIS brochure.

Environmental Construction and Remediation Oversight

Environmental Technology grew out of the remediation services industry and we pride ourselves on still knowing how to get things done. Our construction and remediation oversight personnel have many years of environmental construction and remediation project experience. We believe in allowing our experienced construction staff to manage the projects under the supervision of a consultant, as opposed to having one of our consultants manage the project. This philosophy results in the execution of our environmental construction and remediation projects safety, cost-effectively, and in less time than our competitors.

Regulatory Compliance and Permitting

As local, state, and federal regulations become more complicated, it becomes necessary to have expert consulting on environmental permitting, regulatory compliance and management issues. Environmental Technology provides the following regulatory compliance and permitting services:

- Industrial and Hazardous Waste Stream Review and Notifications
- Stormwater Permitting
- Spill Prevention Control and Countermeasure Plans
- Air Permitting and Air Exemptions
- Source Reduction and Waste Minimization

Wastewater Treatment Systems Design, Installation, and Maintenance

Environmental Technology has the capability to design, install, and service a variety wastewater treatment systems. These systems are designed to bring waste streams into compliance with local, state, and federal regulations. Where applicable, Environmental Technology will utilize equipment already on-site to help reduce compliance costs. Waste water treatment systems may also be combined with biotechnology to produce more efficient treatment methods.

Air Permitting

On behalf of our clients, Environmental Technology has prepared, filed, and received approval for air permits, air permit exemptions, and air emission/inventories at numerous industrial facilities and to permit on-site soil and groundwater remediation systems. Our air permitting staff also has Superfund Amendments and Reauthorization Act (SARA) compliance permitting experience at major chemical production facilities. Our experience includes creating upset emission databases, loading emission databases, and maintenance emission databases. Environmental Technology has also assisted our clients during air permit negotiations and during regulatory audits.

BIOREMEDIATION SERVICES

Bioremediation is the process of using micro-organisms to reclaim soil, sludge, and water impacted by hazardous and potentially-hazardous substances. These micro-organisms may be native to the impacted media, or they may be isolated from natural processes, selectively adapted to degrade a specific substance, and applied to the impacted media.

The broad metabolic capabilities of micro-organisms have the potential to remove or to reduce pollutant concentrations to levels that no longer present a risk to human health or the environment. In addition, the use of micro-organisms is not capital intensive, making Bioremediation a cost-effective solution for both small and large scale applications.

The key to bioremediation is in understanding its strengths and limitations, as well as how to effectively utilize bioremediation in combination with other technologies and complying with current regulatory statutes to reduce overall remediation cost. Considerable advances have recently been made in identifying and enhancing the activity of micro-organisms to biodegrade resistant hazardous and potentially-hazardous substances. Combining Environmental Technology's experience in bioremediation with our experience in executing risk-based closures and our proprietary DRIS technology, provides our site restoration and closure clients with successful results.

Bioremediation Considerations

The success of bioremediation is often based upon overcoming environmental conditions (e.g., soil properties, electron acceptor availability, and nutrient deficiencies) that limit contaminant availability to the micro-organisms and/or rates of microbial growth and enzymatic activity.

At sites where contaminants have been present for an extended period of time, acclimated micro-organisms capable of degrading the waste are often present in the affected media. In these cases, Environmental Technology performs a biological health analysis of the contaminated soil in order to determine whether the necessary indigenous micro-organisms are present to biodegrade the contamination. If the native microorganisms are present, Environmental Technology optimizes their activity by adding nutrients and other essential additives (e.g., an oxygen source). If the number of micro-organisms present are insufficient to degrade the waste, Environmental Technology supplements the site with an appropriate microbial product. In many cases, the environment and/or affected media can be modified to accelerate contaminant degradation. When complete environmental and treatment containment is required, aboveground biological treatment facilities (i.e., reactors) are commonly used.

Contaminants Amenable to Bioremediation

Environmental Technology personnel have successfully biodegraded a variety of organic contaminants in industrial wastewater, groundwater, process wastewater, soil, and sludges. Under the proper conditions, many organic compounds can be biodegraded. Environmental Technology personnel have successfully treated the following classes of contaminants (including specific compounds) using bioremediation processes:

Petroleum hydrocarbons (gasoline, diesel, fuel oil, crude oil, refinery sludges)

Aromatics (benzene, toluene, xylene, ethylbenzene, styrene)

Polynuclear aromatic hydrocarbons (naphthalene, phenanthrene, pyrene, benzo[a] pyrene)

Alcohols (isopropanol, ethanol, ethylene glycol, t-butanol)

Carbohydrates

Animal fats and greases

Detergents

Ketones (acetone, methyl ethyl ketone)

Phenols (chlorophenol, pentachlorophenol)

PCBs (e.g., weathered Aroclor 1242)

Phthalates

Ethylene Glycol

Chlorinated solvents (methylene chloride, ethylene dichloride)

Available data on individual organic constituents indicate that all Appendix VIII waste (40 CFR Part 261) can be degraded under the proper environmental conditions. Compounds which can be microbially mineralized into carbon dioxide, water, ammonia, and/or chloride; or compounds which can be transformed into a nonhazardous intermediary constituents can be biodegraded under the proper conditions.

Advantages

Bioremediation is one of the most cost-effective treatment methods available for destroying certain categories of hazardous and potentially-hazardous substances. When site conditions and time frames are appropriate, bioremediation allows our clients to gain the following advantages:

Uses Proven Technology--Bioremediation is a proven technology for the on-site destruction of many organic contaminants to concentrations below the cleanup standard.

Provides a Flexible Alternative--Treatment can be performed at locations unsuitable for other remedial methods. Bioremediation can be integrated with other technologies.

Minimizes Site Disturbance--Bioremediation can be used for in-situ treatment if site conditions are appropriate.

Reduces Future Liability--Biodegradation destroys the contaminants, and treated media can be left on-site. Future liabilities associated with transporting and offsite disposal of waste are eliminated.

Capitalizes on Cost-Effective Solution--Bioremediation is less expensive when compared with other processes because treatment is conducted on-site and capital investment is low.

DEFINITIONS OF CONVENTIONAL TREATMENT SYSTEMS AND TECHNIQUES

The following presents a brief summary and definitions of various bioremediation treatment systems and techniques.

Soil Treatment

Recirculating Leachbed	A system designed to wash contaminated soils with nutrient, microbe and oxygen enriched water. This can be either an in-situ or ex-situ treatment technique.
Vacuum Heap	Engineered soil piles that provide a constant source of oxygen to indigenous and augmented microbes and provide an infrastructure to supply necessary microbes, nutrients, and control moisture. The engineered heap configuration allows total environmental control. This is an ex-situ treatment technique.

Aboveground	A biological procedure for enhancing Land farming biodegradation of organically contaminated soils using classic composting techniques. This is an in-situ (shallow surface contamination) or ex-situ soil treatment technique.
Bioventing	Air is moved through contaminated soils to increase soil oxygen concentration to stimulate the biodegradation of contaminants by microbial populations. This is an in-situ treatment technique.

Soil and/or Groundwater Treatment

Extraction	Contaminated groundwater is pumped from Recirculation the saturated zone and biologically treated aboveground in a biological reactor. The nutrient, microbe, and oxygen enriched water is then reinfiltrated through the contaminated soils for soil treatment. This is an in-situ treatment technique.
Biosparging	Air is injected into the contaminated saturated zone at a rate which encourages biodegradation of contaminants. Offgases may be extracted and treated, if necessary. Biosparging may be coupled with Extraction/Recirculation treatment systems. This is an in-situ treatment technique.

Groundwater, Process Water, or Wastewater Treatment

Extraction	Contaminated groundwater is pumped from the saturated zone and biologically treated aboveground in a biological reactor and then discharged. This is an ex-situ treatment technique.
Treatment Equipment	Biofilm Fixed film reactors designed to reduce organic contamination Reactors in water while minimizing suspended solids production. Activated sludge systems designed to treat contaminate Reactors water utilizing classic design criteria with specialized bacterial cultures.

DEEP REMEDIATION INJECTION SYSTEM (DRIS)

The DRIS system is a patented technological advancement for the *in-situ* remediation of soil and groundwater. The DRIS system utilizes high-presure, low volume injections of liquid inoculants and air to obtain intimate contact with contaminants in the sub-surface. The system can effectivly penerate sub-surface soils and groundwater at depths up to 30 feet. During penetration/treatment inoculants are dispersed into the matrix via hydraulic fracturing at up to 5,000 psi efficiency. In addition, during the injection sequence air or gas is delivered through the patented multi-port lance at 15 to 40 cfm. The DRIS system can operate as a stand alone remedial system or can augment/stimulate various conventional *in-situ* or *ex-situ* remediation systems.

The following presents a brief summary of the primary DRIS treatment approaches and techniques.

Bioremediation	DRIS has been used to create or enhance aerobic conditions in contaminant plumes via injection of nutrients, moisture, microbes, and oxygen or alternate electron acceptors.
Chemical Oxidation	DRIS has been used to degrade various hydrocarbon compounds in soil and groundwater using elevated concentrations of hydrogen peroxide and iron. This reaction is known as Fenton Reagent Chemistry.

The DRIS system also has proven effective in the treatment of soluble metals, pH imbalances, and brine or salt impacted soils. Additional information is included in the attached DRIS brosure.

Project summaries and staff resumes are available upon request.

ENVIRONMENTAL TECHNOLOGY GROUP

STAFF MATRIX FOR TECHNICAL /FIELD PERSONNEL

EMPLOYEE	EMPLOYEE POSITION	40 HOUR HAZMAT TRAINING	BILLABLE RATE	ENVIRONMENTAL SITE ASSESSMENTS	ENVIRONMENTAL SITE INVESTIGATION AND CHARACTERIZATION	SOIL/GROUNDWATER REMEDIATION AND CONSULTING	UNDERGROUND STORAGE TANK REMOVALS AND REMEDIATION	RISK BASED CORRECTIVE ACTIONS	RCRA FACILITY INVESTIGATIONS	BIOREMEDIATION	ENVIRONMENTAL CONSTRUCTION & REMEDIATION OVERSIGHT	REGULATORY COMPLIANCE AND PERMITTING	WASTEWATER TREATMENT SYSTEM DESIGN, INSTALLATION AND MAINTENANCE	SOIL & GROUNDWATER SAMPLING	GEO-PROBE & DRILLING SERVICES	AUTOCAD DESIGN	ENGINEERING SYSTEM DESIGN/CONSTRUCTION	NORM SURVEYS	
Jerry D. Nickell, B.S. Bus., REM	Principal	X	75.00	X	X	X	X	X	X	X	X	X	X	X					
Jesse Taylor, B.S. Geo.	Sr. Geologist	X	75.00	X	X	X	X	X	X	X	X	X		X					X
Lee D. Hobbs, B.S. M.E.,	Sr. Engineer		75.00															X	
Ken McLeroy, B.S. Geo.	Sr. Geologist	X	75.00	X	X	X	X	X		X	X	X		X					X
Brittan Byerly, B.A. Geography, M.S. Geo.	Sr. Geologist	X	75.00	X	X	X	X	X	X	X	X	X		X					
Matina Smith, B.S. Geo.	Sr. Geologist	X	75.00	X	X	X	X	X	X	X	X	X		X					
Beth Aldrich, B.S. Geo.	Sr. Geologist	X	75.00	X	X	X	X	X	X	X	X	X		X					X
Michelle Novak, B.S., M.S. Microbiology	Env. Scientist	X	65.00	X	X	X		X		X	X			X					
Anissa W.-Green, B.S. Chem., M.S. C.E.	Staff Engineer	X	65.00	X	X	X		X		X	X	X	X	X					
Jason Henry, B.S. Env. Sci. (grad. 5/01)	Staff Env. Sci.	X	60.00	X	X	X					X	X		X					
Ken Dutton, AAS/Env. Tech.	Proj. Manager	X	65.00	X	X	X				X	X	X		X					
Camille Reynolds, AAS/Env Tech.	Field Technician	X	45.00	X	X									X					
Ross Stevens, AAS/CAD	Tech. Draftsman	X	55.00	X							X		X	X	X	X			
Joe Justus, CAD	Tech. Draftman	X	55.00											X		X			
Mike Nickell	Proj. Manager	X	65.00	X	X	X	X			X	X	X	X	X					
Eb Taylor	Oper. Manager	X	65.00	X							X			X	X				
Mike Barnes	Safety/Const. Supv	X	65.00															X	
William Hules	Drilling Supt.	X	55.00			X				X	X			X	X				
Darrin Stark	Drilling Apprent.	X	45.00											X	X				
Jeff Dority	Field Supv.	X	55.00			X				X	X			X	X				
Jim Dowling	Field Supv.	X	55.00			X				X	X			X					
Ernest Saiz	Field Technician	X	45.00			X				X	X			X					
Jacob Arguello	Field Technician	X	45.00			X				X	X			X					
Simon Casas	Field Technician	X	45.00											X					
Danny Stevens	Field Technician	X	45.00			X				X	X			X					
Shane Diller	Field Technician	X	45.00			X				X	X			X					
Steven Baeza	Field Technician	X	45.00			X				X	X			X					

ENVIRONMENTAL TECHNOLOGY GROUP, INC.
BETH A. ALDRICH
Staff Geologist

RELEVANT HIGHLIGHTS
knowledge of encapsulation systems for contaminated soils in the oil industry
knowledge of environmental remediation processes for petroleum industry in New Mexico and Texas
ability to communicate ideas and concerns to large groups as well as coworkers
ability to conduct safety training seminars tailored to specific needs
knowledge of soil properties for remediation and analysis

EDUCATION

University of Texas - Austin, Petroleum Engineering
Marietta College, BS Geology

PROFESSIONAL CERTIFICATIONS AND SPECIALIZED TRAINING

40-Hour OSHA Hazardous Waste Training
NORM
DOT/OSHA/MSHA
ADA/EFOC
First Aid/CPR and AED trainer
D.D. Instructor

REPRESENTATIVE EXPERIENCE

Ms. Aldrich has the ability to transfer abstract concepts into concrete applications. Ms. Aldrich has designed and implemented encapsulation systems for contaminated soils in the oil industry to New Mexico Oil Conservation Division standards, setup systems and analyzed data for water and air monitoring projects as well ongoing environmental remediation projects for petroleum industry clients in New Mexico, Texas and North Dakota

- Ability to multi-task. As project manager Ms. Aldrich is involved in bidding to project setup to field work to report generation. She is able to do safety investigations as well as analytical testing for hydrocarbon contaminants as well as consulting to clients on safety and environmental concerns.
- Ability to communicate ideas and concerns to large groups as well as staff and coworkers. Conduct safety training seminars for diverse groups of customers, tailoring to specific needs.
- Ability to delineate and analyze soils at sites to formulate applicable remediation processes.
- Multi-faceted project/personnel oversight, data analysis, contractor management. Able to prioritize. Diligent to detail.

Personnel Experience
Statement of Qualifications

ENVIRONMENTAL TECHNOLOGY GROUP, INC.

JESSE C. TAYLOR
Principal Geologist

RELEVANT HIGHLIGHTS
environmental site assessments/due diligence
in-situ remediation of soils and groundwater
fate and transport modeling of contaminants in soil and groundwater
regulatory compliance and permitting
environmental business management
pipeline risk management
UST site remediation
phase I environmental site assessment
oil and gas exploration and production experience

EDUCATION

Business-University of Colorado, Denver, M.B.A.
University of Georgia, B.S. Geology
Colorado School of Mines, Hazardous Materials Management Program

PROFESSIONAL CERTIFICATIONS AND SPECIALIZED TRAINING

Professional Geologist Registration Wyoming & Pennsylvania
American Institute of Professional Geologist
National Groundwater Association
Colorado Hazardous Waste Management Society
40-Hour OSHA Hazardous Waste Training
8-Hour OSHA Site Supervisor Training
UST Certification in Multiple States
Lead Base Paint Assessment and Abatement Certifications
Asbestos Certification Supervisor-Contractor
Risk-Based Corrective Action Training and Certification

REPRESENTATIVE EXPERIENCE

Mr. Taylor has over 23 years experience in the oil and gas industry in which the last ten years have been dedicated to petroleum site assessment and remediation. During that time Mr. Taylor has managed a wide range of sensitive environmental sites, primarily regarding petroleum contamination. Mr. Taylor has combined business experience and scientific methods to provide a well-rounded perspective regarding environmental issues. Mr. Taylor has extensive experience with regulatory compliance, site assessment, site remediation, fate and transport modeling, and hydro-geologic investigations. Mr. Taylor has been instrumental in developing regulatory guidelines regarding risk-based corrective action in Colorado and Texas. Representative Projects include:

- Project Manager for a large due diligence project involving the merger of two major oil companies. This included inspection of all pipeline facilities, and assessment of related environmental liabilities.This project had greater than 1MM budget, and thirty dedicated personnel. The project was completed on time and under budget.

- Project Manager for a large pipeline release site in an environmentally sensitive area. Extensive emergency response, remediation, and fate and transport modeling was required on this project.

- Account Manager for a large pipeline system, covering the Rocky Mountain, Mid-Continent and Gulf coast regions, which is owned and operated by a major oil company. Activities included regulator assessment and recommendations, permitting, RBCA assessments, intrusive site investigations, corrective action plans and remediation.
- Account manager for a pipeline system, covering the Mid-Continent region, which is owned and operated by a large independent refined products transmission and distribution company. Activities include transaction negotiations, regulatory interface and representation, budgeting for environmental costs, budgeting for system upgrades and project coordination. The account represents approximately 1MM gross revenue per year.
- Project Manager for the environmental investigation and remediation of refined product distribution terminals. The investigation phase of these sites include the installation of a total of 120 ground water monitoring wells and numerous geoprobe borings. The remediation phase includes the design and installation of large soil vapor extraction (SVE) and air sparging (AS systems). All these sites required close cooperation with regulatory agencies and client relation with these agencies improved during these activities.

- Project Manager for the environmental assessment and remediation of a major crude oil spill at a crude gathering facility on Navajo Nation Land. Work required knowledge of the appropriate remediation technology and close cooperation with the U.S. EPA and the Navajo Nation EPA.

- Project Manager for Phase I and Phase II investigations on 48 oil and gas producing properties in California, Oklahoma, New Mexico and Texas. The projects included regulatory review of each site, site file review, equipment inventory and inspection and an assessment of the cumulative environmental liability. At several of the properties, the vadose zone, groundwater and surface water were significantly impacted. Phase II investigations were designed to determine extent and remedial action plans were written for several sites.

- Project Manager, for numerous UST sites in Colorado. These sites were owned and operated by a major oil company. Sites required Site Investigations, UST removal, over excavations, product removal and remedial phases. Coordinated regulatory compliance with state agencies.

- Assistant Project manager for large EPA Emergency Response Site in Wyoming. A large liquid: phase hydrocarbon plume, covering over 100 acres, intersected a river and an EPA cleanup order was issued under the Clean Water Act and the Oil Pollution Act. The work included determining the geographic extent of the plume and maintaining an emergency slurry well and pump and treat system. Under his direction, the plume extent and probable source area was defined. Additional remediation was recommended.

- Vice-President for exploration in Rocky Mountains for independent oil and gas company based in Denver, Colorado. Responsible for discovery of approximately five million barrels of oil reserves. Also responsible for developing company-wide exploration strategy, technological development, field development and sales, daily operations and financial management of 20 MM annual exploration budget.

PRESENTATIONS AND PUBLICATIONS

Taylor, J.C., 1984, Minnelusa Formation Exploration, Powder River Basin, Wyoming: An Integrated Approach in Seismic Exploration of Rocky Mountain Region, Special Publications of RMAG an DGA (Rocky mountain Association of Geologists and Denver Geophysical Association) pp105-124.

PROFESSIONAL AFFILIATIONS

National Groundwater Association
American Institute of Professional Geologists
American Association of Petroleum Geologists
Rocky Mountain Association of Petroleum Geologists
Colorado Hazardous Waste Management Society

ENVIRONMENTAL TECHNOLOGY GROUP, INC.

JERRY D. NICKELL
Managing Principal

RELEVANT HIGHLIGHTS

environmental site assessments/due diligence
agreed order/consent decree negotiations
in-situ remediation of soils and groundwater
oil and gas waste management and minimization programs
deep well injection system design and operation
regulatory compliance and permitting RCRA and RCRA exempt
railroad commission enforcement action negotiations and resolutions
development of waste tracking and reporting data base
who's who of environmental professionals listing
inventor, patent # 5,868,523, deep remediation injection system
environmental business management

EDUCATION

LaSalle University, B.S., Business
Midland College, Petroleum Land Management,
University of Wisconsin-Milwaukee, In-Situ Remediation Engineering Techniques

PROFESSIONAL HISTORY

Trinity Oil and Gas, President, 1980 to 1985
Jerry D. Nickell Consulting, Inc., Principal, 1986 to 1990
Grasso Environmental, Director of Remediation, 1990 to 1992
Nickell Environmental Corporation, President , 1992 to 1997
Environmental Technology Group, Inc., Managing Principle/President, 1997 to Present

PROFESSIONAL CERTIFICATIONS AND SPECIALIZED TRAINING

Registered Environmental Manager #7946
Environmental Assessments for Real Property Transfers
Environmental Auditing and Compliance
Due Diligence on Low Cap Loans
Risk Based Assessments of Contaminated Sites
Soil Remediation by Low Temperature Thermal Destruction
Insitu Soil and Groundwater Remediation Techniques
Bioremediation of Contaminated Soils and Groundwater
Chemical Oxidation of Organic Compounds in Soil and Groundwater
Producing Oil and Gas Property Assessments
Environmental Chemistry and Analytical Methods
40-Hour Hazardous Waste Operations Instructor
40-Hour Hazardous Waste Operations
8-Hour Supervisory Hazardous Waste Operations

REPRESENTATIVE EXPERIENCE

Mr. Nickell has over 18 years experience in the oil and gas industry with an emphasis on environmental waste management and remediation. Over the past 8 years, he has managed a wide range of environmental services, ranging from due diligence assessments to complex soil and groundwater remediation projects. He is well-versed in the capabilities and advantages of bioremediation and has implemented and managed numerous successful projects throughout the United States. He has served a diverse range of clients in manufacturing, oilfield service, oil & gas exploration and production, and petroleum chemical industries. Mr Nickell developed and implemented standards for due diligence pre acquisition site assessments for producing

oil and gas properties, oil and gas service companies and large real-estate transactions. In addition, Mr. Nickell has been at the forefront of new insitu remediation technology with his development of the Deep Remediation Injection System (DRIS), a proprietary, patented technology for in-situ biological and/or the chemical oxidation of contaminants in soil and groundwater. He has also engineered, designed, and managed deep injection disposal wells and wastewater treatment systems using Ion Exchange, Ultra Filtration, and Reverse Osmosis Technologies for the treatment of industrial wastewater discharges. Representative projects include:

- Project Manager for developing cost effective methods to remediate oil field production pits. Worked with local and state regulators and clients to achieve a cost-effective method for pit closure.
- Project Manager responsible for development and over site in conducting Phase I and Phase II pre-acquisition due diligence investigation, remedial cost estimates and contract negotiations for a 40,000 acre producing property, consisting of over 1,000 producing wells, 5 saltwater disposal facilities, 2 gas compressor stations, and 14 gas meter stations.
- Project Manager responsible for regulatory negotiations and site closure guild lines under a TNRCC agreed order, conducting risk based assessment, remediation, and regulatory closure of a 30 acre former galvanizing plant site.
- Project Manager for remediation of contaminated soil using thermal desorption. Responsible for regulatory and client contact, transport and sampling of soil, and regulatory closure of site.
- Developed and implemented Corporate Environmental Policy and Procedure Manual for a fortune 500 oilfield service company.
- Project Manager for overseeing all facets of operations that impact the environment for a major oilfield tool rental company with multiple facilities throughout the U. S. And Canada. This included providing training for hazardous materials handling and designing and constructing structures and systems to prevent pollution and implement source reduction and waste minimization.
- Designed and developed treatment protocols and cost guild lines for over 100 sites utilizing the Deep Remediation Injection System (DRIS) for insitu remediation of soils and groundwater under regulatory closure guidelines.
- Project Manager for numerous facility closures, which includes removal of industrial leachfield, underground petroleum storage tanks, excavation of contaminated soils with confirmatory sampling, sump integrity testing, subsurface investigations, etc. for facilities throughout U. S. and Canada.
- Project Manager for the remediation of over 10,000 cubic yards of soil contaminated with petroleum hydrocarbons, resulting from the leakage of underground wastewater sumps, oil/water separators and waste collection pits at a vacated oilfield service facility in Central Oklahoma.
- Designed and installed industrial wastewater recycling systems at industrial facilities to implement waste reduction and eliminate the liabilities associated with noncompliant industrial wastewater discharge to municipal sanitary sewer systems where metal components made pre-treatment inefficient and costly.
- Supervised reclamation of oilfield brine impacted land in South Texas, under the Texas Railroad Commission regulatory guidelines. Projects included location debris cleanup, restoring soil fertility, salinity reduction, land contouring, and revegetation.
- Design, permitting and development of a Railroad Commission of Texas 600 acre land treatment facility for the treatment and disposal of water based drilling fluids.

- Performed in excess of 200 Due Diligence Environmental Site Assessments in Texas, Louisiana, New Mexico, California and Oklahoma for industrial, and oil and gas clients. Assessments ranged from Phase I studies to Phase II investigations to developing remediation cost estimates, including surface and subsurface soil and groundwater investigations, petroleum storage tank assessments, remediation and regulatory permitting.

- NPDES permitting for numerous oilfield service and manufacturing companies and industrial manufacturing facilities.

PROFESSIONAL AFFILIATIONS

American Petroleum Institute - Houston Chapter
National Registry of Environmental Professionals

ENVIRONMENTAL TECHNOLOGY GROUP, INC.
MICHELLE NOVAK
Staff Environmental Scientist

RELEVANT HIGHLIGHTS

knowledge of organic contaminant fate and transport processes
knowledge of microbial biodegradation of hydrocarbons in subsurface environments
knowledge of aqueous geochemistry, risk assessment, policy analysis and pollution microbiology
fate and transport problem solving using human health and ecological risk assessments
written and oral communication skills through grant-writing, seminar presentation and class lectures

EDUCATION

Medical University of South Carolina Doctoral Program in Molecular & Cellular Biology and Pathobiology
Medical University of South Carolina, MS Environmental Studies
Texas A&M University, BS Zoology
Austin College

PROFESSIONAL CERTIFICATIONS AND SPECIALIZED TRAINING

American Society for Microbiology
40-Hour OSHA Hazardous Waste Training

REPRESENTATIVE EXPERIENCE

Ms. Novak has a broad knowledge of organic contaminant fate and transport processes, particularly microbial biodegradation of hydrocarbons in subsurface environments. Ms. Novak has knowledge of aqueous geochemistry, risk assessment, policy analysis and pollution microbiology. Ms. Novak is experienced in interpretation of contaminant fate and transport to solve problems using human health and ecological risk assessments, and to provide sound environmental site assessments. Ms. Novak has proven written and oral communication skills through grant-writing, seminar presentation and class lectures. Representative Projects include:

- "Metal toxicity reduction by *in situ* stabilization: Enhancing intrinsic bioremediation of chlorinated hydrocarbons". This project was in conjunction with the Savannah River Ecology Laboratory at the Savannah River Site, Aiken, SC. The project designed specialized media and implemented protocol for protein quantification in the presence of metals. Data interpretation as well as reading comprehension of scientific writing was involved.

- "Desulfurization of Petroleum". Worked with a team of scientists at Energy BioSystems to further biocatalyst development for the desulfurization of petroleum products. A written paper was the final product of the internship.

- Case studies included: underground storage tanks with Risk-Based Corrective Action, air permitting study focused on Best Available Control Technologies, policy case study addressed permits and applied cost-benefit analysis.

- The course work for the MS degree included: policy course work in which the environmental policy process was reviewed, and policies were studied. Individual projects focused on the endocrine disruptor task force as well as a final paper concerning the amendments to CERCLA Risk assessment course focused on risk and hazard fundamentals as well as on calculations to determine total risk, relative risk, and quantification of exposure. Included dose-response models and thresholds of dose. Also covered risk based corrective action (RBCA) human risk assessment and ecological risk assessment. Pollution Microbiology was one of several science courses, and it focused on the pollutants from industry and the ability to enhance microbial populations to alter the contaminant. Final project consisted of a grant concerning remediation of marine oil spills in National Institute of Health format.

PRESENTATIONS AND PUBLICATIONS

Khijniak, TV, **MT Novak**, AG Sowder, PM Berstch, PJ Morris. Impact of Nickel and Uranium Contamination on Microorganisms in the Steed Pond Corridor at the Savannah River Site. National American Society for Microbiology Meeting. Los Angeles, CA, May 2000.

Bertsch PM, PJ Morris, AG Sowder, TV Khijniak, and **MT Novak**. Preliminary Investigation of U and Ni in Riparian and Wetland Sediments: Microbial Ecology and the Potential of Apatite Amendments for Reducing Metal Availability and Toxicity. EPA/DOE/NSF/ONR Bioremediation Research Program Review, Bloomingdale, IL, November 3-5, 1999.

Khijniak, TV, **MT Novak**. AG Sowder, PM Bertsch, and PJ Morris. Effect of Uranium and Nickel Contamination on the Microbial Community Structure at the Savannah River Site. Southeastern Regional Meeting of the American Society for Microbiology, Jekyll Island, GA, October 28-30, 1999.

Novak, MT, TV Khijniak, AG Sowder, PM Bertsch, and PJ Morris. Toxicity of Nickel and Uranium to Microorganisms in the Steed Pond Corridor. Southeastern Regional Meeting of the American Society for Microbiology, Jekyll Island, GA, October 28-30, 1999.

Fridrick, C, M Nalty, **M Novak**, S Lantz, JC Schneider, A Darzins, and P Pienkos. Isolation and Characterization of a biodesulfurizing *Nocardia* sp. National Meeting of the American Society for Microbiology, Chicago, IL, May 30-June 3, 1999.

Novak, MT. Metal Toxicity Reduction by *In Situ* Stabilization: Enhancing Intrinsic Bioremediation of Chlorinated Hydrocarbons. Molecular & Cellular Biology and Pathobiology Internal Seminar Series. April 12, 1999.

Novak, MT, and JR Chose. Potential for intrinsic bioremediation of petroleum impacted sediments in the Cooper River, Charleston-North Charleston, SC. Charleston/North Charleston Community-Based Environmental Protection Project Meeting for Earth Day. Charleston Commissioners of Public Works, Charleston, SC, April, 1998.

PROFESSIONAL AFFILIATIONS

Member of the American Society for Microbiology

ENVIRONMENTAL TECHNOLOGY GROUP, INC.
ANISSA P. WALTON-GREEN
Staff Environmental Engineer

RELEVANT HIGHLIGHTS
experience conducted bench scale, plot scale tests Part A
experience with updating and revision RCRA permits
experience monitoring nuclear and mixed hazardous waste stored in tanks
knowledge of designing municipal and industrial wastewater systems
knowledge of planning and management of multi-objective water resource systems
written and oral presentation skills through report writing and thesis defense

EDUCATION

University of Hawaii, MS Civil Engineering-Environmental, (Field of Study- Water and Wastewater Treatment)
Prairie View A&M University, BS Chemical Engineering

PROFESSIONAL CERTIFICATIONS AND SPECIALIZED TRAINING

40- Hour OSHA Hazardous Waste Training
Radiological Workers Training- 8 hour course
Hazardous Waste Handling and Management- 16 hour course

REPRESENTATIVE EXPERIENCE

Ms Walton-Green has experience performing bench-scale and pilot-scale tests in a laboratory environment. Ms Walton-Green has developed techniques for treatment and disposal of nuclear products as well as, improving laboratory procedures for the proper handling and storage of hazardous materials through Standard Operating Procedures (SOPs). Ms Walton-Green has experience obtaining requirements and preparing Resource Conservation and Recovery (RCRA) Part A Permits. Ms Walton-Green has proven written and oral communication skills, representative projects include:

- "Regeneration of Granular Activated (GAC) using Solvent-Desorption at DBCP, EDB and TCP". Master Thesis. This research was conducted for the City of Honolulu to find ways to extend the life of GAC used for local ground water purification. The project required data collection using Gas Chromatography. Fina; results were submitted in a masters thesis and an oral defense.

- "Siloxene as a Proposed Mechanism for Photoluminiscent Porous Silicon". A research project conducted through the S.P.E.A.R. Program sponsored by the Science and Technology Center for Synthesis, Growth and Analysis of Electronic Materials at the University of Texas at Austin. Ten weeks of independent research concluding with an oral presentation and final written report.

- The course work for MS degree included: Laboratory course work relating to water quality-microbiology, biochemistry with special emphasis on mixed culture systems. The Design of primary, secondary and tertiary wastewater treatment plants for municipal and industrial

wastewater. Planning and management of multi-objective water resource systems with development of Environmental impact Statements (EIS). Evaluating major environmental factors affecting water quality. Determining Engineering aspects of analysis in relationship to control and management of water quality improvement. Public health courses in solid waste management and occupational health.

PROFESSIONAL AFFILIATIONS

American Institute of Chemical Engineers (AIChE)
Society of Women Engineers (SWE)
Charter Member and President of University of Hawaii at Manoa 1995-96, 1996-97
Member- Columbia Valley Chapter Richland, WA-1993-94
Member- Prairie View A&M Chapter 1990-1993
Member- Tau Beta Phi, National Engineering Honor Society-1992-1997

SCHOLARSHIPS/AWARDS

1996 Recipient of the Lorenzo C. Fruto Memorial Scholarship from University of Hawaii Department of Civil Engineering.