NM - 22

MONITORING REPORTS

PROPOSAL

YEAR(S):

JAN. 31, 2001

PROJECT:
INVESTIGATION, CLEANUP AND ENVIRONMENTAL REMEDIATION
OF THE GOODWIN TREATING PLANT

Offeror Name: Sustainable Environmental Solutions

Project Approach (75): _____

Project Plan (150): _____

Experience:

Proposed project staff experence in oil field cleanup/remediation (150):

_____

Offerors Organizational relevant experience (175): _____

References:

Corporate(75): _____

Staff (75): _____

Cost (300): 803,773

Turnkey: _____

Itemized supplemental: _____

Total points : _____

Letter of Transmittal. ✓ complete

organization 1. ✓ 2. ✓ 3. ✓ 4. ✓ 5. ✓ 6 ✓ 7 ✓

Responsive

Board

Mayk

PROPOSAL

INVESTIGATION, CLEANUP, AND ENVIRONMENTAL REMEDIATION OF THE GOODWIN TREATING PLANT LEA COUNTY, NEW MEXICO

January 31, 2001

Submitted to:

State of New Mexico
Energy, Minerals and Natural Resources Department
New Mexico Oil Conservation Division

Submitted by:

Sustainable Environmental Solutions
Las Cruces, New Mexico

and

Bay West, Inc.
Lenexa, Kansas

SUSTAINABLE ENVIRONMENTAL SOLUTIONS, INC.
712 Stagecoach Drive, Las Cruces, New Mexico 88011 Phone: (505) 522-1172 Fax: (505) 522-2782

January 30, 2001

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

RE: Proposal for Investigation, Cleanup, and Environmental Remediation of the Goodwin Treating Plant

Dear Ms. Kieling:

Sustainable Environmental Solutions, Inc. (SES) is pleased to submit three copies of our proposal to investigate, cleanup, and remediate the Goodwin Treating plant located in Lea County, New Mexico. The enclosed proposal is based on the December 11, 2000, request for proposal (RFP) Phase I Investigation report, and a site visit conducted on January 10, 2001.

The following information is submitted pursuant to Section II D of the RFP:

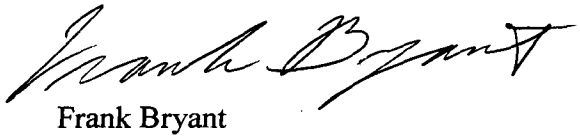
1. Submitting Organization: Sustainable Environmental Solutions, Inc. (SES).
2. Name and title of person authorized to contractually obligate the organization: Frank Bryant, President.
3. Name, title, and telephone number of person authorized to negotiate the contract on behalf of the organization: Frank Bryant, President, (913) 307-0046,extension 12.
4. Name, title, and telephone number of person to be contacted for clarification: Ted Hartsig, Senior Soil Scientist, (913) 307-0046, extension 14.
5. SES explicitly accepts the conditions set forth in Section II of the RFP detailing conditions governing the procurement.
6. Authorizing signature: Signed below.
7. Acknowledgement of receipt of amendments to this RFP: No amendments were received.

We are very pleased with the team that we are proposing for this project. Our team has outstanding experience completing similar projects across the country. We are also anticipating seamless management of this project because the two primary staff members, Ted Hartsig with SES and Phil Dula with Bay West, who have a working relationship spanning almost 15 years. In addition, the team is solely composed of small and women owned small businesses.

As principal in charge of this project, I am committed to ensuring that this project will be completed to the satisfaction of State of New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division. If I may be of service to you during the proposal process or during project implementation please contact me at the number provided above.

Sincerely,

SUSTAINABLE ENVIRONMENTAL SOLUTIONS, INC.



Frank Bryant
President

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Proposal Summary

PROPOSAL SUMMARY

Sustainable Environmental Solutions (SES) in Las Cruces, New Mexico has teamed with Bay West, Inc., an environmental remediation specialty firm in Lenexa, Kansas, to provide professional services for the investigation, cleanup, and environmental remediation of the Goodwin Treating Plant in Lea County, New Mexico. Our proposal is responsive to the Request for Proposals (RFP) solicited by the State of New Mexico Energy, Minerals, and Natural Resources Department - Oil Conservation Division (EMNRD-OCD) on December 11, 2000. Our proposal includes the following sections providing information as requested:

Proposal Summary
Response to Technical Specifications
Response to Business Specifications
Proposed Offer
Additional Terms and Conditions
SES Qualifications
Bay West Qualifications

Following this Proposal Summary, the contents of each of these sections are briefly summarized.

Response to Technical Specifications

The Response to Technical Specifications presents our team's understanding of the project requirements, our proposed project approach, proposed project plan, and qualifications to perform this project. The focus of our project approach is to restore the Goodwin Treatment Plant to conditions consistent with the requirements of the EMNRD-OCD and New Mexico Administrative Codes Titles 14, 19, and 20. Because the volume and content of solids and waste materials from the tanks is not fully defined, our approach for this project also includes flexibility to respond to unanticipated site conditions.

Project Approach

The Goodwin Treating Plant is not a particularly large site, but the complexity of the project, including the presence of NORM, the possibility of additional amounts of waste materials or petroleum products, and the transport and disposal or recycling of materials from the site will require effective and responsive management. Our project management approach involves close coordination and communication with all parties working on this project, from the EMNRD-OCD project manager through each of the subcontractors. Effective project management is also essential for maintaining the project budget, schedule, obtaining necessary permits, development of project documentation, personnel safety, and quality assurance.

Flexibility for addressing changes in the field will be very important for the success of this project. For this proposal, we are assuming optimal site conditions as presented in the request for proposal. We are aware, however, that site conditions may be different than expected.

To complete the site investigation, waste/product characterization, and remediation, our approach involves the following order of field tasks:

- Mobilization and site setup, and coordination of subcontractors.
- Conduct NORM survey and sample tank contents to determine chemical and physical composition of the materials and their volumes.
- Complete the subsurface investigation involving soil boring, sample collection and screening, monitoring well construction, development, and groundwater sampling.
- Evaluate the results of the NORM survey/screening and the tank content sampling.
- Removal of the liquids and tank bottoms after the contents have been adequately characterized and volumes estimated.
- Removal of the liquids and tank bottoms will be initiated after the contents have been adequately characterized and volumes estimated.
- Demolition and removal of the redwood tanks followed by demolition and removal of the redwood tanks.
- Excavation of contaminated soils from below the wood tanks will occur while demolition of the metal tanks is proceeding.
- During the excavation process, sampling for the extent of TPH, BTEX, and chloride contamination will be conducted to determine the limits of excavation.
- Upon completion of the tank removal and excavations, the excavations will be completely backfilled, graded, and prepared for seeding with native grasses for soil stabilization and erosion control.
- Phase 1, 2, and 3 project reports will be completed as required by the EMNRD-OCD providing documentation of the investigation, characterization and demolition, and remediation of the site.

We anticipate that the project will be completed most effectively and efficiently by accomplishing many of the tasks either concurrently while in the field, or with enough overlap that multiple mobilizations and subcontractor downtime can be minimized. We also understand that there are many unknown facts that may impact the project, and our project approach includes time for evaluating new information and working with the EMNRD-OCD to amend plans as necessary to accommodate unforeseen site conditions.

Project Team

Our project team is comprised of companies and individuals with outstanding experience in decontamination and demolition of petroleum storage and treatment facilities. Such experience is necessary to assure the proper progression of tasks to be completed, data quality assurance, health and safety measures for protection of people working at the site, protection of the environment, and for full compliance with New Mexico regulations for environmental protection. In addition to SES and Bay West, our team includes:

- Environmental Dimensions, Inc. (EDI), Albuqueque, NM – EDI is certified and licensed to conduct radiation surveys in New Mexico.

- Cardinal Laboratories, Hobbs, NM – Cardinal Laboratories will provide analytical services for liquid and soil samples collected at the site.

- Walton Constructon Company, Hobbs, NM – Excavation of contaminated soils and transportation of media to treatment or recycling facilities.
- Eberline Laboratories, Albuquerque, NM – Eberline Laboratories will provide radionuclide analyses for radium-226 on all samples that exceed 50 mR/hr from field screening.
- Southwest Safety, Hobbs, NM – Product removal from tanks, including liquids and solids.
- CRI Transport, Hobbs, NM – Transportation of liquids removed from tanks.
- J&L Disposal – Landfarm treatment facility.
- Fluid Transports, Inc., Snyder, TX – Transport of NORM to disposal facilities.
- Lotus, L.L.C., Andrews, TX – Treatment and disposal of NORM-containing wastes.
- Curtis and Curtis, Roswell, NM – Final site restoration (seeding).

All of the businesses proposed for subcontracting are small or women-owned small business enterprises.

Project Plan

Our proposed Project Plan provides details of how SES and Bay West will accomplish the objectives of this project. Our plan cannot be accomplished without providing outstanding staff. Our team includes the following key personnel:

Project Manager	Ted Hartsig, C.P.S.S. SES
Remediation Manager	Phil Dula, P.G. Bay West
Field Manager	Keith Ellis, Bay West
Investigation Manager	John Parks, P.G. SES.
Quality Assurance Manager	Mr. Patrick Splichal, SES
Health and Safety Manager	Keith Brown, SES

The qualifications and experience of each of these team members are provided in this propsal.

Pending approval of a contract between SES and the EMNRD-OCD, we anticipate that the project will begin in late February and be completed by late August, assuming that removal and disposal of the wastes is not hindered by the presence of unknown hazardous and/or NORM compounds. With the high winds that dominate weather in this area during March and April, we may want to consider delaying field work until May to minimize windblown particulates and hazards that could occur from unsecured materials (including wood and/or metal) at the site.

Within our proposed project plan, we provide the details of field work to be accomplished during the investigation, cleanup, and remediation of the site. This includes the specific order of work, methods of how work will be accomplished, and potential problems that could arise, but with awareness we

may be able to avoid. With any plan, we recognize that changes in field conditions are inevitable. Our plan accounts for such changes, and provides alternative approaches, if necessary.

Our plan also describes provisions for site security, internal controls, and checkpoints. We believe it is absolutely necessary to maintain tight controls on all activities at the site not only to assure compliance with the schedule and budget, but to maintain integrity of the work site, identification of wastes leaving the site as well as potential contaminants that could enter the site. Our goal is to minimize wastes and maximize recycling of all materials. We also will maintain high health and safety standards, including radiation training and monitoring, personal protective equipment, and exposure monitoring.

Exception to the Scope of Work

Our proposal is submitted based on the limited knowledge available about the Goodwin Treating Plant site. From information we have learned about the Goodwin Treating Plant, we believe the following amendment to our proposed project approach should be implemented.

1. Conduct a thorough characterization of the contents of each tank. The characterization of each tank would include both the physical phases of materials in each tank, and analyses of the chemical constituency of the tank contents. This information is required for documentation of waste treatment, disposal, and recycling.

2. From the information obtained from step 1, determine the nature and volumes of the materials present in the tanks.

3. Evaluate the most appropriate and efficient methods for removing products from the tanks. Assess methods of waste minimization to reduce the volume of materials requiring disposal.

4. Contact licensed disposal and/or treatment facilities, including recycling facilities, to coordinate logistics for the final disposition of the products removed from the site.

5. Re-evaluate the scope of work and associated cost estimates to revise budgets and project plans.

6. As noted in the project approach and plan, while not part of the scope of work, we propose that final site preparation and seeding be included as part of the scope of work.

Response To Business Specifications

In this section of the proposal, we state our exceptions to the sample State of New Mexico Professional Services Agreement. In general, we are in acceptance of most of the provisions of this agreement.

Proposed Offer

As required by the RFP, we have submitted our proposed offer by technical specification and as a turn-key total cost. These estimated costs are presented with assumptions. We have also provided supplemental line item costs as identified in the RFP. Lastly, we present costs of proposed changes in the project, including costs for RCRA waste characterization that will be required by treatment and

disposal facilities, alternative cost approaches for the disposal of NORM-contaminated redwood tank planks, and costs for more accurate field screening methodology.

Additional Terms and Conditions
In this section we present additional terms and conditions to be considered as part of a contract, including a provision for a Force Majuere.

SES Qualifications
This section of the proposal provides qualifications of SES, and resumes of key personnel assigned to this project.

Bay West Qualifications
This sections provides qualifications of Bay West, including resumes of key personnel assigned to this project.

RESPONSE TO TECHNICAL SPECIFICATIONS

Project Understanding

We understand that the primary objective of this project is to remove the relic facilities existing at the former Goodwin Treatment Plant near Hobbs, New Mexico, and characterize, remove, and dispose of existing petroleum fluids and contaminated materials. The principal components of the scope of work include:

1. Determination of the vertical and horizontal extent of potential contaminant migration in soil and groundwater.

2. Characterizing contents of the aboveground storage tanks on site for the presence of naturally-occurring radioactive materials (NORM).

3. Removal of all fluids and other materials from the tanks for appropriate recycling and/or disposal.

4. Removal of all metal and wood tanks and all relic materials on the site for recycling and/or disposal.

5. Excavation and removal of contaminated soil for landfarming or, if found to contain unacceptable levels of NORM, for appropriate disposal.

From the information provided with the RFP, the Goodwin Treating Plant was operationally closed in 1995. At that time, Petro-Thermo Corporation (PTC) abandoned the site with most of the structures, 23 aboveground storage tanks, two thermal treaters, and an injection well operated by AGUA Corp. Information in the letter dated September 15, 1995, from PTC to the EMNRD-OCD indicated that liquid would be removed from tanks nos. 101 to 110, and from the thermal treaters. The letter stated that all other tanks at the site were empty except the redwood tanks nos. 111, 112, 113, 114, and 121. These tanks reportedly contained heavy mud and undefined (bulk solids and wastes) materials that would have to be shoveled out.

The Phase I assessment completed by AMEC in October 2000, provided evidence that materials contain NORM, particularly in tank no. 112 where the NORM levels were above regulatory action levels. The report provided a general and apparently rough estimate of the types and volumes of contents of the tanks. This information indicates approximately 1,820 barrels of undefined liquids (or more than 76,000 gallons, based on a 42-gallon oil field barrel) are present in the tanks. The report stated that the fluids are essentially non-recyclable. From the information in the report, a total of approximately 15,000 cubic feet (or nearly 560 cubic yards) of solid materials are present in the tanks (based on the estimated depth of solids in the tanks, and an estimated 20 foot diameter for each of the tanks). The chemical and physical constituencies of the solids are not defined. In addition, an unknown quantity of petroleum-contaminated soil is present on the site. We understand that for this proposal, we will use an estimated quantity of 1,450 cubic yards for purposes of estimating costs for removal of the solid materials from the site for landfarming.

Our project approach and proposed project plan for completing this scope of work are provided on the following pages. In addition to the project approach and project plan, we also are proposing alternative approaches to consider for the completion of this project that may provide increased efficiency and cost savings. However, we feel that the scope of work as provided in the RFP does not address full characterization of the contents of the tanks and thermal treating units at the site. In response, we have prepared an exception to the scope of work and addendum to our project approach that is presented at the end of our proposed project plan.

Finally, this section ends with a summarization of our corporate and staff experience and qualifications for completing this project.

Project Approach

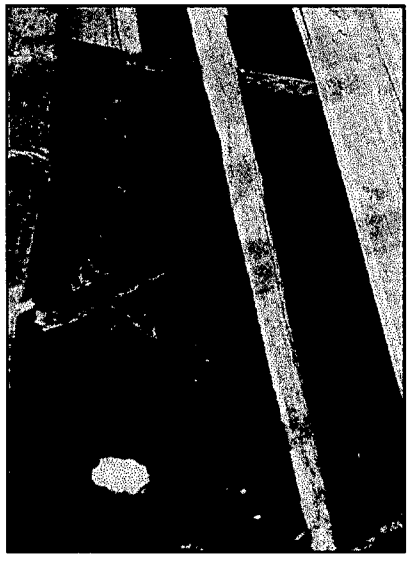
The focus of our project approach is to restore the Goodwin Treatment Plant to conditions consistent with the requirements of the EMNRD-OCD and New Mexico Administrative Codes Titles 14, 19, and 20. Within this context, our goal is to provide maximum worker health and safety, achieve environmental cleanup standards, recycle the maximum amounts of materials to be removed from the site, and dispose of contaminated media in the most efficient and environmentally sound manner. Our project approach incorporates the requirements of the EMNRD-OCD's scope of work in a manner that is the most efficient in means of schedule and cost, and thorough in meeting the objectives of the EMNRD-OCD. Because the volume and content of solids and waste materials from the tanks is not fully defined, our approach for this project also includes flexibility to respond to unanticipated site conditions.

We feel that the first critical steps of the project involve the initial kickoff meeting between our project team and the EMNRD-OCD. This meeting location is proposed at the Goodwin Treating Plant site and will include the SES project manager, Mr. Ted Hartsig, the Bay West manager, Mr. Phil Dula, and the field manager, Mr. Keith Ellis. The objective of the meeting is to establish lines of communication, reporting requirements, schedules, and other requirements of the EMNRD-OCD. We propose meeting at the site to discuss potential contingencies that could arise so these may be addressed proactively. Following the kickoff meeting, it is essential to prepare project work plans, including appropriate quality assurance and health and safety plans. The work plans will provide details of each task to be accomplished for this project. With the development of work plans, we will immediately commence with preparing documentation necessary for permits to complete the project, including drilling and monitoring well construction, waste disposal, and transportation of NORM.

To complete the site investigation, waste/product characterization, and remediation, our approach involves the following order of field tasks:

1. **Mobilization** and site setup, and coordination of subcontractors. During this time, exclusion zones staging areas, truck loading and turn-around areas, decontamination areas, and equipment laydown areas will be established. A site trailer will be delivered to the site for setup for the duration of field activities. Team members will also begin disassembling ladders, piping, and other objects around the site and stockpiling them into a staging area.

2. **Conduct NORM survey and sample tank contents** to determine chemical and physical composition of the materials and their volumes. This is a particularly critical step in the project due to the indeterminate volumes of liquids and bottoms in the tanks, and the concentrations of petroleum compounds and possibly NORM. Additionally, facilities that receive the solids for either landfarming or disposal will require a full characterization before they can accept them This information will also be essential for prioritizing removal of the tank contents, and the equipment needed to complete the removal of the tank contents.



The contents of some of the tanks are poorly characterized and largely unknown as shown in Tank 121 on the west side of the site. Waste disposal and treatment facilities typically require a full characterization, possibly including TCLP analysis for hazardous constituents. Therefore, characterization of the tank contents may take longer than anticipated.

3. **Complete the subsurface investigation** involving soil boring, sample collection and screening, monitoring well construction, development, and groundwater sampling. This investigation is also a very important initial task. The information will not only provide characterization of subsurface and groundwater conditions, but the determination of the depth to groundwater will impact the cleanup goals and the volume of petroleum-contaminated soils that will be excavated. The soil boring, monitoring well installation, and associated sampling will be conducted concurrently with the NORM survey and tank content characterization.

4. **Evaluate the results** of the NORM survey/screening and the tank content sampling. This short process will enable our field manager to prioritize removal of materials in the tanks and contact transportation contractors and waste/recycling facilities to inform them of the volumes, types, and characteristics of materials to be received.

During this phase of the project, we propose to also collect preliminary soil samples to determine if BTEX compounds are present in conjunction with TPH contamination at the site. This would aid in screening soil samples and determining the extent of soil contamination later in the project. Our experience is that at arid sites, these volatile compounds may be sufficiently diminished in the near-surface soils to be inconsequential.

5. **Removal of the liquids and tank bottoms** will be initiated after the contents have been adequately characterized and volumes estimated. We plan to use two teams to conduct this task. Our approach involves removal of all liquids and as much of the tank bottoms as possible using vacuum trucks. Other solid tank bottoms may have to be removed using mechanical means. After the contents of the metal tanks are removed, the tanks will be immediately decontaminated so drippings and contaminants can be collected and removed with the tank contents.

6. **Demolition and removal of the redwood tanks** will be initiated after their contents have been removed. Our approach involves dismantling the wood tanks on the east side of the site. During this process, the wood will be screened to determine if it is contaminated with NORM. The redwood tanks on the west side of the site will then be dismantled, screened, and staged for removal from the site. The wood will be segregated by potential contaminant content; that is, if it has NORM contamination, excess petroleum contamination, or if it can be separated for disposal at a regular landfill or as fuel.

7. **Demolition of the metal tanks** will begin after the wood tanks have been removed. The metal tanks are generally in good condition. If desired, the metal tanks may be recycled in whole, however, we are assuming that the tanks will be dismantled for removal and recycling purposes. Tank no. 123 may be salvaged in whole if it is found that corrosion of the tank is not significant.

8. **Excavation of contaminated soils** from below the wood tanks will begin while demolition of the metal tanks is proceeding. We understand that contaminated soils with total petroleum hydrocarbon (TPH) concentrations greater than 100 parts per million (ppm) will be excavated unless the depth of groundwater is greater than 50 feet below ground surface (bgs). If groundwater is greater than 50 feet bgs, only contaminated soil with TPH concentration greater than 1,000 ppm will be excavated.

9. **Sampling for the extent of TPH, BTEX, and chloride contamination** will be conducted to determine the limits of excavation during the excavation process,. After the initial removal of obviously contaminated soils, a flame ionization detector (FID) will be used to screen soils along the walls and floor of the excavation. NORM surveys will also be conducted to determine if the soils are so contaminated. Samples will be collected from the location(s) showing the highest FID readings for analysis of TPH, BTEX, and chloride as described in the RFP. Results of the sample analyses will be returned to the site within 24 hours so that definitive limits of the excavation can be confidently established. Excavated soil will be stockpiled on 6-mil polyethylene plastic in a staging area or will be directly loaded on trucks for transport to a landfarm treatment facility. If characterization of the tank contents indicate that hazardous compounds could be present, selected samples will also be analyzed for RCRA constituents.

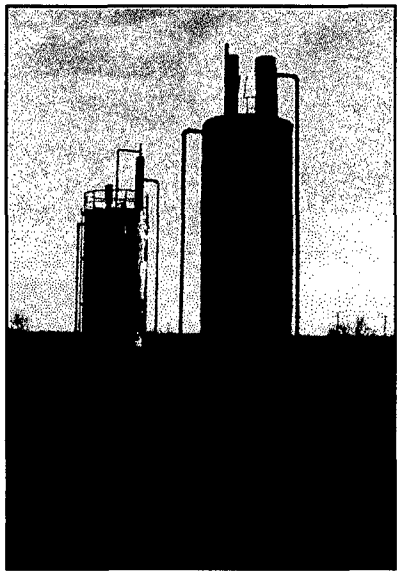
From our knowledge of local geology in the area, it is possible that the site is underlain by highly cemented caliche, forming a potentially limiting barrier to the vertical

migration of petroleum contaminants. This layer may be less than five feet below the ground surface, and if encountered could present difficulties to further excavation. We are prepared to mechanically break the caliche, if necessary, or more practically assess the extent of potential migration of petroleum and/or chloride into the material and determine if excavation can be limited to the depth of this barrier.

If the cleanup goals for soil are 100 ppm TPH, we propose using field test kits to screen soils to determine the limits of excavation. The test kits will be much more reliable than an FID with relatively low concentrations of TPH, and may enable the project to reduce the number of samples needed for laboratory analysis.

10. As tanks are removed from the site, excavation will advance accordingly. As soil is removed from the site to the landfarm, trucks returning to the site will bring clean soil for backfill into the excavation. This will eliminate double trips for the vehicles.

11. **Thermal treaters will be decontaminated, demolished, and removed** from the site. If it has been determined that the units are empty and that no NORM is present, the treaters will either be removed in whole if desired by recyclers, or they will be cut apart for removal to the recycling facilities. We plan to minimize the amount of cutting to reduce labor efforts.



We are not certain of the internal structure of the thermal treaters, and this will require further examination at the site. It is possible that the treaters have substantial buildup of scale or my have other types of solid contamination requiring characterization. Upon examination of the internal structure and possible solids such as scale or other materials, we may be able to determine the best method of decontaminating and demolishing these units.

12. Upon completion of the tank removal and excavations, the excavations will be completely backfilled and graded with a positive slope to maximize runoff from the contaminated areas. The site will be final graded and prepared for seeding with native grasses for soil stabilization and erosion control.

13. Phase 1, 2, and 3 project reports will be completed as required by the EMNRD-OCD providing documentation of the investigation, characterization and demolition, and remediation of the site.

We anticipate that the project will be completed most effectively and efficiently by utilizing a diverse project team with the highest caliber talent. Using our diverse team, we can accomplish many of the tasks either concurrently while in the field, or with enough overlap that multiple mobilizations and subcontractor downtime can be minimized. We understand the order of tasks that need to be completed before subsequent tasks can be initiated, and have developed a project plan that demonstrates the flow of anticipated work. We also understand that there are many unknown facts that may impact the project, and our project approach includes time for evaluating new information and working with the EMNRD-OCD to amend plans as necessary to accommodate unforeseen site conditions. The project plan is presented later in this section.

Project Management Approach: The Goodwin Treating Plant is not a particularly large site, but the complexity of the project presented by characterization of waste materials, including the presence of NORM, the possibility of additional amounts of waste materials or petroleum products, and the transport and disposal or recycling of materials from the site will require effective and responsive management. Close coordination and communication with all parties working on this project, from the EMNRD-OCD project manager through each of the subcontractors, is essential for the success of this project. Effective project management is also very important for this project to maintain the project budget (including cost containment), schedule, obtaining necessary permits, development of project documentation, personnel safety, and quality assurance.

Flexibility for addressing changes in the field will be very important for the success of this project. For this proposal, we are assuming optimal site conditions as presented in the request for proposal. We are aware, however, that site conditions may be different than expected. For instance, the contents of the thermal treaters is not known, thus decontamination and demolition of the two units may require multiple options. Likewise, the contents of tank 121 may be more than reported, or may require more thorough characterization to assess the material content or volume to be removed from the site. Therefore, our project approach and plans developed for the project must incorporate contingencies that will enable us to work with the EMNRD-OCD project manager to make many field decisions.

To account for possible amendments to the project budget resulting from potential changes in the field, we will work with the EMNRD-OCD to develop revised cost estimates. Through regular communications within the project team, including the EMNRD-OCD project manager, we will make sure that subcontractors have resources available for removing, transporting, and accepting additional wastes if necessary, or that all parties are aware of changes if less material is required to be removed from the site.

To manage the project, we will utilize in-house tools such as Microsoft® Project, bi-weekly MIS budget reports, and weekly communication between all team members to assure that tasks are coordinated and completed as scheduled. Task management will be coordinated with work breakdown structures and Gant charts with specific assignments that will be sent to all team members.

Technical Expertise: Our project team is comprised of companies and individuals with outstanding experience in decontamination and demolition of petroleum storage and treatment facilities. Such experience is necessary to assure the proper progression of tasks to be completed, data quality

assurance, health and safety measures for protection of people working at the site, protection of the environment, and for full compliance with New Mexico regulations for environmental protection. To provide the technical expertise necessary for this project, our team includes:

SES – SES is responsible for all work completed at the site and is the responsible authority for all decisions. SES responsibilities include:

- Management of the project, including working closely with Bay West during site operations to assure completeness and quality of the project; and
- Environmental characterization of the nature and extent of petroleum contamination at the site. This involves:
  - Soil boring and sampling to determine the vertical extent of contamination;
  - Groundwater monitoring well construction and sampling; and
  - Field screening and soil sampling during the excavation of soils to determine when sufficient soil has been removed for recycling or disposal.

SES will be responsible for the completion and delivery of all project reports.

Bay West, Inc. – Bay West will provide management and oversight of the following:

- Characterization of tank contents, including liquids and solids, their removal and final disposition (recycled or disposal);
- The decontamination and dismantling of all tanks, and their removal for recycling or disposal; and
- The excavation and removal for disposal or landfarming contaminated soils in accordance with the requirements of the EMNRD-OCD.

Bay West will work closely with SES to assure that site remediation is completed to the standards of the EMNRD-OCD, including the backfilling of excavations with clean fill soil. They will also assist SES with the preparation of all project reports.

Environmental Dimensions, Inc. (EDI) – EDI is certified and licensed to conduct radiation surveys in New Mexico. EDI's responsibilities include:

- Conduct surveys for NORM in the waste fluids and bottom materials in the tanks;
- Survey for NORM that may be present in soils from below the storage tanks;
- Instruction of all site personnel in radiation safety; and
- Radiation monitoring for health and safety during project field work in which NORM may be encountered.

Cardinal Laboratories – Cardinal Laboratories will provide analytical services for liquid and soil samples collected at the site. The laboratory is certified in New Mexico for analyses of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and toluene (BTEX), and chloride in soils, and for these compounds plus polynuclear aromatic hydrocarbons (PAH), total dissolved solids (TDS), major cations/anions, and New Mexico Water Quality

Control Commission (WQCC) metals for groundwater samples. We have arranged for Cardinal to provide 24-hour turn-around on sample analysis so characterization and excavation of contaminated soils can proceed as expediently as possible. This will minimize operational downtime and enable work to proceed more continuously.

Other subcontractors assisting with this project include:

Walton Constructon Company, Hobbs, NM – Excavation of contaminated soils and transportation of media to treatment or recycling facilities.

Eberline Laboratories – Eberline Laboratories in Albuquerque will provide radionuclide analyses for radium-226 on all samples that exceed 50 mR/hr from field screening.

Southwest Safety, Hobbs, NM – Product removal from tanks, including liquids and solids.

CRI Transport, Hobbs, NM – Transportation of liquids removed from tanks.

Fluid Transports, Inc., Snyder, TX – Transport of NORM to disposal facilities.

Lotus LLC, Andrews, TX – NORM Treatment and Disposal Facility

J&L Disposal, Hobbs, NM – Landfarm treatment facility.

Curtis and Curtis, Roswell, NM – Final site restoration (seeding).

Project Plan

The project plan is essential for assuring that all aspects of the Goodwin Treatment Site investigation and cleanup are accomplished thoroughly and on a timely basis. Our project plans will include the following:

- Project Management Plan;
- Investigation Plan;
- Waste Characterization and Remediation Plan;
- Quality Assurance Plan; and
- Health and Safety Plan

Summaries of our project plan are provided on the following pages.

1. Project Management Plan

The Project Management Plan will describe project assignments and responsibilities, establish the basis of communication between the NM ODC and all of the team members, and present a schedule of tasks, reporting requirements, and administrative requirements.

i. **Project Assignments** – An organization chart provided on the following page shows team assignments for this project. Key project assignments are:

Project Manager: Ted Hartsig, SES. Mr. Hartsig is responsible for coordination of all tasks and assuring that the project schedule is adhered to and that technical and administrative requirements of the EMNRD-OCD are achieved. He is also responsible for final decisions regarding characterization, transportation, and dispositions of site materials. Mr. Hartsig will be the primary point of contact for the EMNRD-OCD project manager, and he will coordinate and lead report production and delivery. He also be responsible for subcontracting, assuring quality control measures are followed for all activities, budget management, and invoicing.

Quality Assurance Manager: Mr. Patrick Splichal, SES. Mr. Splichal will provide quality assurance review for this project. His responsibilities include review of all project plans for completeness, that data quality assurance is achieved by proper and well documented sample collection and delivery controls, and laboratory quality control measures. He will also provide quality reviews of the Phase 1, 2, and 3 project reports, and audit of project records.

Investigation Manager: John Parks, P.G. SES. Mr. Parks will be responsible for leading the investigation of the nature and extent of contaminants at the site. He will oversee drilling, monitoring well construction, and soil and groundwater sampling.

Health and Safety Manager: Keith Brown, SES. Mr. Brown will provide health and safety oversight during investigation, cleanup, and remediation activities. He will assure that the site-specific health and safety plan is adhered to, conduct daily health and safety briefings, and log personnel on the site. He will also work closely with EDI staff to make sure radiation monitoring is completed.

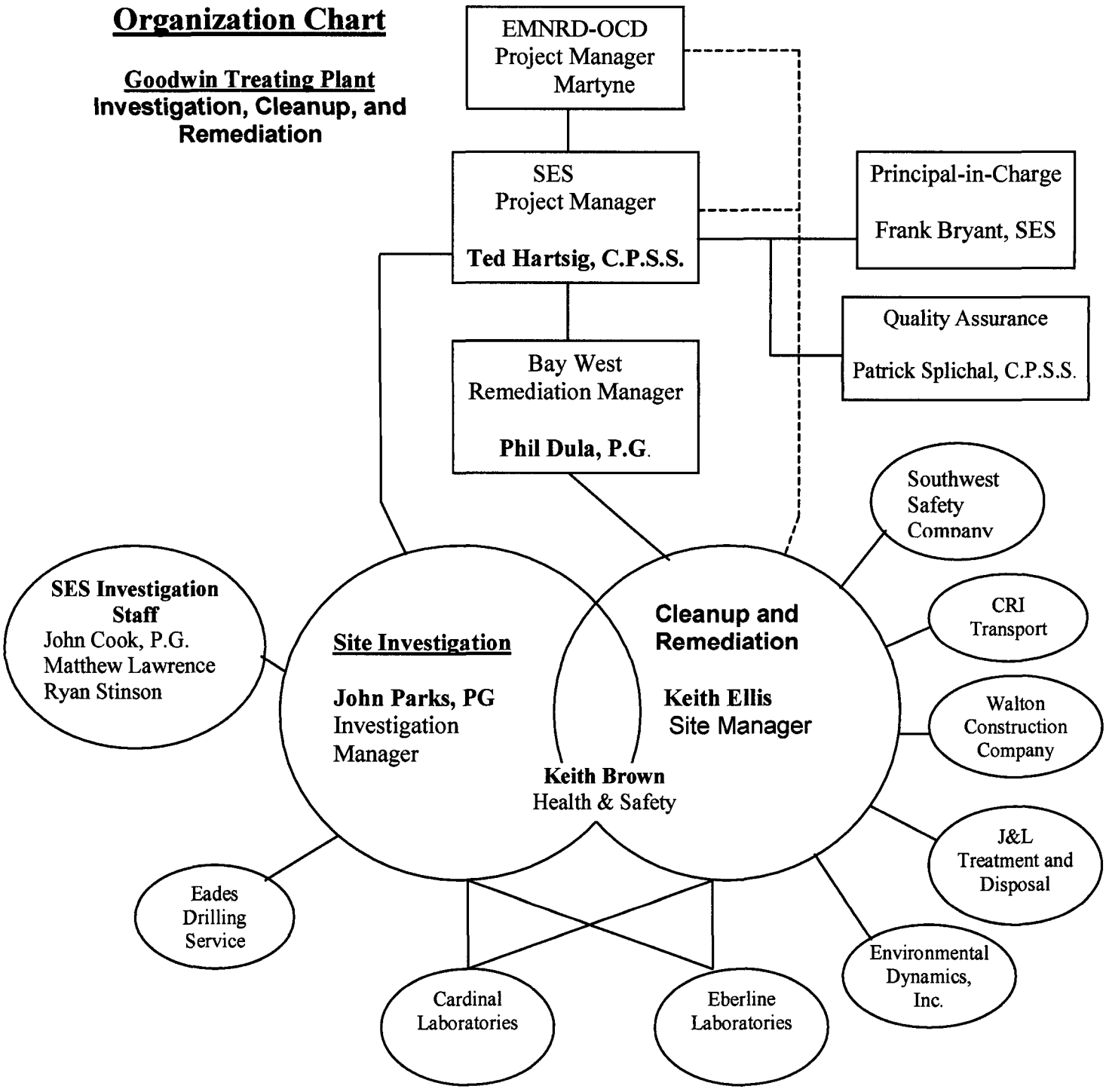
Remediation Manager: Phil Dula, P.G. Bay West. Mr. Dula will be responsible for managing site cleanup and remediation activities, including NORM, for the demolition, removal, and final disposition of the tanks and other relic objects at the site, and for excavation and final disposition of contaminated soil at the site. Mr. Dula will be responsible for coordinating subcontractors related to remediation activities.

Field Manager: Keith Ellis, Bay West. Mr. Ellis will be responsible for oversight and completion of all field activities involving waste characterization, removal, and transport to its final point of disposal, treatment, or recycling.

ii. **Communications** – Mr. Hartsig will be the primary point of contact for the EMNRD-OCD project manager, and will convey any requirements of the EMNRD-OCD to the project team. The EMNRD-OCD will also have direct communication as needed with Mr. Dula and Mr. Ellis for remediation activities. Communications to subcontractors and project staff are illustrated on the organization chart.

Organization Chart

Goodwin Treating Plant
Investigation, Cleanup, and Remediation



Our organization chart is designed to show lines of responsibility and communication. The bubble format is used to stress the interactive coordination required by personnel working at the site, and including coordination with subcontractors.

iii. **Project Schedule** – A proposed project schedule is provided on the following page that details expected periods of performance for each task. Pending approval of a contract between SES and the EMNRD-OCD, we anticipate that the project will begin in late February and be completed by late August, assuming that removal and disposal of the wastes is not hindered by the presence of unknown hazardous and/or NORM compounds. With the high winds that dominate weather in this area during March and April, we may want to consider delaying field work until May to minimize windblown particulates and hazards that could occur from unsecured materials (including wood and/or metal) at the site.

iii. **Project Reporting** – Reports of project progress will be made to the EMNRD-OCD project manager on a weekly basis. The Phase 1, 2, and 3 project reports documenting the project will be delivered at agreed upon dates by the EMNRD-OCD and SES.

iv. **Administrative Requirements** – This section of the Project Management Plan will provide information about resources, staff, problem resolution, and financial concerns.

2. Investigation Plan

Our investigation plan is focused primarily on the subsurface investigation to evaluate vertical migration of petroleum contaminants, and to delineate the limits of excavation of contaminated soil. Included with the Investigation Plan will be a site map showing site features and the drilling location, as well as a depiction of known contaminated soils. In addition, background information of the geology and groundwater will by summarized.

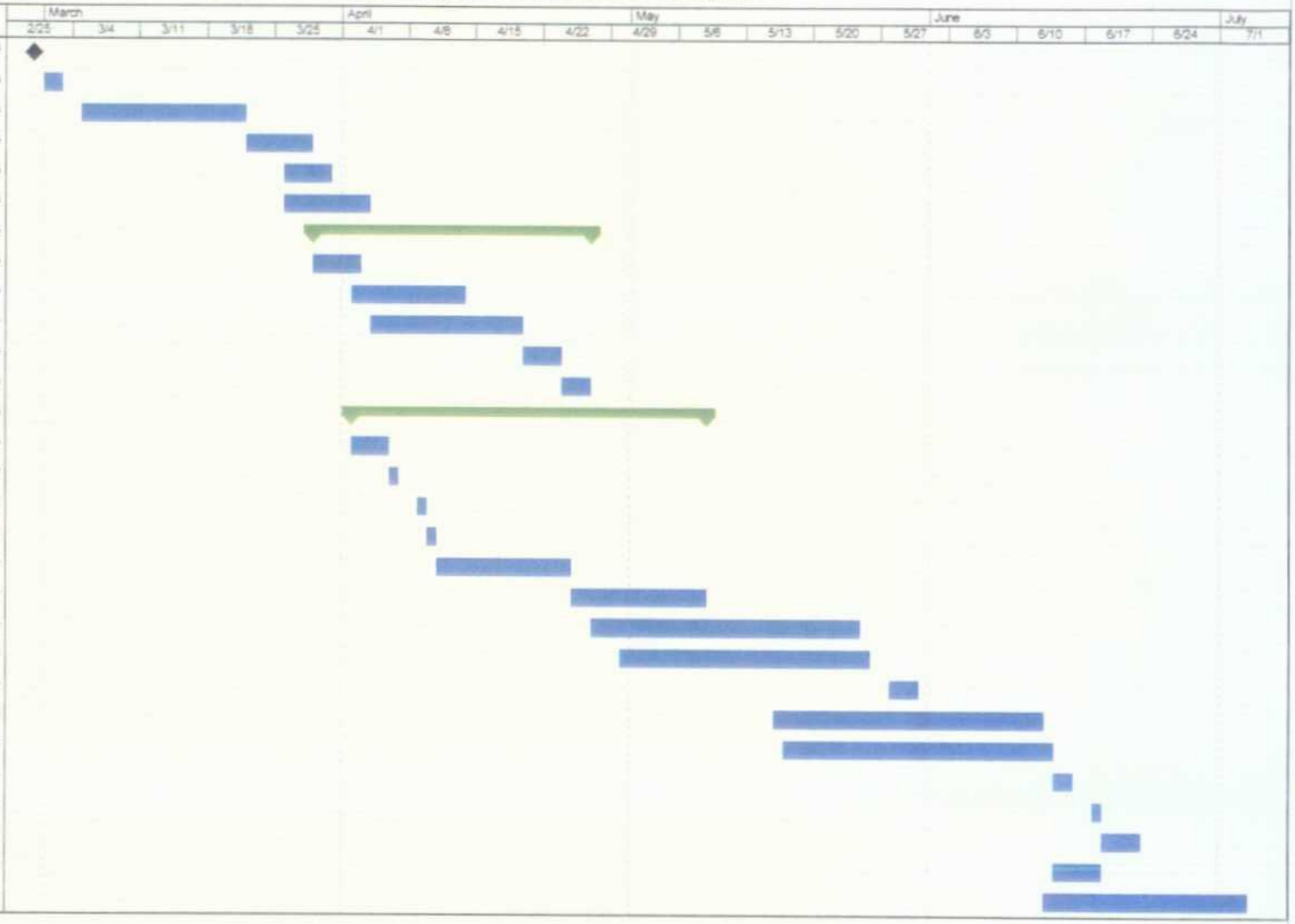
i. The subsurface investigation will be conducted at the onset of field activities. Data quality objectives include characterization and verification of potential contaminant migration from both petroleum products and brine seepage through the overflow pit. The subsurface investigation will consist of the following activities:

- Soil boring will be advanced using an air rotary drilling rig operated by Eades Drilling Services. The borehole diameter will be 6.5 inches with soil samples collected using a 2-inch (I.D.) split spoon at intervals as required in the RFP. All split spoon samples retrieved from the borehole will be screened for NORM and volatile organic compounds (principally TPH) using an FID. A sample will be collected from each interval, packaged and kept on ice until delivery to the lab. The screening information will be recorded in the drilling log. The drilling log will also include descriptions of the lithology encountered, wetness, and determination of the water table surface. A boring log will be produced for the Phase I report. Chain of custody procedures will be followed to document sample transfer.

PROPOSED PROJECT SCHEDULE

Goodwin Treating Plant Investigation, Cleanup, and Environmental Remediation

ID	Task Name	Duration
1	**Notice to Proceed**	0 days
2	**Kickoff Meeting**	2 days
3	**Project/Work Plans**	13 days
4	**NMOCD Review**	5 days
5	**Mobilization to Site**	5 days
6	**Remove Relic Materials**	7 days
7	**Waste/Product Characterization**	**21 days**
8	NORM survey	3 days
9	Tank content characterization	10 days
10	Lab analyses	12 days
11	Waste Evaluation	2 days
12	Coordinate Subcontractors	3 days
13	**Subsurface Investigation**	**27 days**
14	Drilling/Sampling	4 days
15	Well Construction	1 day
16	Well Development	1 day
17	Well Sampling	1 day
18	Sample Analysis	10 days
19	Complete Phase I Report	10 days
20	**Product Removal/Tank Decon**	20 days
21	**Tank Demolition/Removal**	20 days
22	**NORM survey (Phase 2) report**	3 days
23	**Remove Contaminated Soil**	20 days
24	**Soil sampling/Analyses**	20 days
25	**Finish backfill/regrade**	2 days
26	**Site Restoration**	1 day
27	Demobilization	4 days
28	**Verification of Product/Waste Disp**	3 days
29	**Phase 3 Report Completion**	15 days



Project: goodwin
Date: Mon 1/29/01

Task | Milestone | Rolled Up Critical Task | Split
Critical Task | Summary | Rolled Up Milestone | External Tasks
Progress | Rolled Up Task | Rolled Up Progress | Project Summary

The soil boring/monitoring well will be located in the overflow pit located on the southeast corner of the site (foreground in the photograph)

- Split spoon samples will be collected from the 3- to 5-foot bgs depth and at 10-foot intervals until the depth of groundwater is realized. The last soil sample will be collected at the depth of the water table. The soil samples from the 3- to 5-foot bgs interval, from the groundwater depth, and one sample from the interval having the highest screening reading detected from between the top and the bottom of the boring will be submitted to Cardinal Laboratories for analysis of TPH, BTEX. Samples from each of the intervals will be submitted for chloride analysis.

- A monitoring well will be constructed as described in the RFP. The well will be constructed with 2-inch (I.D.) schedule 40 PVC with 15 feet of 10-slot screen. Ten feet of screen will be placed below the realized water table, and 5 feet of screen above the water table surface. The well will be true and plumb to assure sampling devices can be lowered without hindrance. Sand or gravel pack will be set around the well screen to 3 feet above the screen. A 3-foot bentonite plug will be placed above the sand/gravel pack, and the remainder of the borehole will be sealed with a cement and bentonite (5 percent) plug. The well will be completed with a 3-inch concrete pad (4 feet by 4 feet) and locking well cover. The well location and elevation will be surveyed using geopositioning satelite technology, and all information will be recorded in the drilling and well log for the site.

- The well will be developed using USEPA methodologies, including purging a minimum of five well volumes from the well. Development will occur the day following construction of the well.

- Twenty-four hours after development has been completed, the well will be sampled using USEPA groundwater sampling methodology. Primary and duplicate samples will be collected for polynuclear aromatic hydrocarbon (PAH) compounds, total dissolved solids (TDS), major cations/anions, and New Mexico Water Quality Control Commission metals. All analyses will be completed using USEPA analytical protocols and quality assurance/quality control procedures. Samples will be labeled with the sample name, time of collection, analyses to be performed, and signature of the sampler. The samples will be kept on ice until delivered to Cardinal Laboratories for analyses. Chain of custody procedures will be followed to document sample delivery.

ii. Investigation of the lateral extent of petroleum contamination will occur with the excavation of contaminated soils as described in the project approach. The investigation will begin following the initial excavation of contaminated soils from below the redwood tanks on the east portion of the site (Tanks Nos. 1, 114, 115, 116, 117, and 118). Using an FID, head space screening will be conducted to determine if petroleum hydrocarbons can be detected along the walls and from the floor of the excavation. A soil sample will be collected from the floor of the excavation below each tank that was removed for analyses of TPH and BTEX. In addition, a soil sample will be collected from the screening location along the excavation wall that detected the highest reading of petroleum hydrocarbons. Soil samples for laboratory analysis will be collected from the locations of Tanks Nos. 1 and 118 before the excavation if visual examination and screening (FID and NORM) indicate that TPH contamination may be minimal.

The investigation of the lateral extent of contamination will continue in this manner until it has been determined that no further excavation is necessary. When it appears that the limits of excavation have been achieved, soil samples will be collected from the base of the excavation walls to be submitted for analyses of TPH, BTEX, and chloride to confirm that acceptable contaminant concentrations have been achieved. We understand that the cleanup levels for TPH are dependent upon the depth of groundwater. If the groundwater table is greater than 50 feet bgs, the cleanup level will be 1,000 ppm TPH, 50 ppm BTEX, and 10 ppm benzene. Under these conditions, head space analysis for screening of the soils should be sufficient to define the lateral extent of soil excavation. If the groundwater table is less than 50 feet bgs, we propose using a field test kit method for determining the lateral extent of excavation. The test kit is more sensitive and accurate in determining minute concentrations of TPH and will result in more reliable results.

> The RFP calls for approximately 35 soil samples to be collected for laboratory analyses. Because of the unknown extent of contaminant migration, substantially more samples may be required for laboratory analysis to sufficiently determine the limits of excavation. Use of field test kits may provide more accurate screening of the extent of TPH migration and could be used to limit the number of soil samples required for laboratory analysis. We propose using the DEXSIL PetroFLAG® Hydrocarbon Test Kit to provide field screening of soils. Detailed information about this product is provided in Appendix C

All soil screening and sampling information will be documented in a site logbook maintained by the investigation crew. This information will be used in preparation of the Phase II report to be completed for the project.

3. Waste Characterization and Remediation Plan

The Waste Characterization and Remediation Plan will be comprised of the following components:

i. Waste Characterization: Samples of liquids in tanks 105, 106, 108, 109, 111, 113, 114, 115, 116, 117, 118, and 121 will be collected for waste characterization in order that final disposition of the materials can be determined. Samples will also be collected from the tank bottoms to characterize their content and physical nature. Receivers (disposal or recycling facilities) of the tank contents must have information about the content of the materials to determine how it can be handled. A NORM survey of the contents will also be completed for each tank to assess radiological hazards. During the waste characterization, a sampling tube will be used that can provide information about the depth and types of liquids in each of the tanks that contain liquids, and the depth and density of solids or sludges at the bottom of the tanks. This information is necessary to accurately determine disposition of the materials upon removal, as well as considerations for health and safety, removal strategy, and if the materials need to be segregated or if they can be blended for disposal efficiency.

Because the contents of the thermal treaters, if any, is unknown, we will investigate and characterize these structures last. This will enable removal of the contents of the other tanks to begin while the treaters are being characterized. We are not certain of the stability or safety of the structures, therefore, a hydraulic lift will be used to access the top of the treaters where determination of the contents can be completed. The treaters will be examined to locate access portals from which to determine the nature of the interior of the units. If liquids are present, a container will be lowered for collection of a sample for NORM survey and analytical characterization of the material.

ii. Waste/Product Removal: The plan will present detailed requirements for removal of the contents of the tanks and transport for their final disposition (disposal, treatment, or recycling). Based on current information, we are planning that liquids will be able to be removed using a vacuum truck. Tank bottoms (sludges), if they are soft enough, can also be removed by jetting with water and suction into the vacuum truck. The tank bottoms may be too solid however for being removal by a vacuum truck, and may require removal using a clam shell, or they may require being mechanically broken before they can be removed from the tank. While the tank contents are being removed, they will be monitored for NORM content to assure that they are acceptable as non-radioactive for disposal or landfarming. The contents from the tanks will be segregated by content and waste potential (recyclable, special waste, or radioactive) to assure that mixing of different waste streams will not occur. Liquids from the thermal treaters, if any are present, will also be removed using vacuum trucks.

After the liquids and tank bottoms have been removed, the interior of the tanks will be decontaminated using steam cleaning. Drippings and other materials resulting from the steam cleaning will be collected and disposed of with the former tank contents. Two crews will be working simultaneously on tank content removal and decontamination to enable the process to proceed expediently and allow materials to be segregated and staged for transportation to disposal or landfarm facilities. The thermal treaters will be decontaminated separately as described below.

> The final disposition of tank bottoms to be removed from the site is uncertain until each of the tanks have been fully characterized. The final disposition of these materials will require evaluation of analytical results so the project team, in consultation with the EMNRD-OCD project manager, can determine the resources necessary for removal from the tanks and if the materials can be landfarmed or need to be disposed at an appropriate, licensed facility. This process will provide the opportunity to communicate volumes and contents to subcontractors to assure resources are available for removal of the tank bottoms from the site.

iii. Tank Removal: As described in the project approach, demolition, and removal of the storage tanks at the site will begin with the redwood tanks on the east side of the site, followed by the redwood tanks on the west side of the facility. This will enable us to segregate, stage, and dispose of the wood from these tanks in a minimal number of trips. Prior to removal of the tanks, all supporting structures such as stairs, ladders, catwalks, and aboveground piping and valves will be collected and decontaminated for recycling. These materials will then be staged for removal from the site to a recycling facility.

The redwood tanks will be disassembled by removing the metal bands from the tanks and removing the individual boards. The metal bands will be staged in a decontamination area and cleaned for recycling. As the wood siding of the tanks are moved, they will be screened for NORM. Assuming the wood is free of NORM contamination, we will have previously arranged for disposal as fuel by the local power company or other operations that may burn materials for heat. Otherwise, the wood will be segregated by degree of petroleum staining or contamination to determine if it must be disposed as a special waste, or can be disposed in a municipal landfill.

After the redwood tanks have been removed, the metal tanks will follow. We assume at this time, based on the observed condition of the tanks, that they will be recycled either in whole or in pieces. The tanks will be demolished using hydraulic shears. We will only shear the tanks into pieces that can be transported safely from the site, using a minimum of cuts through the tanks.

After the metal tanks have been removed from the site, the thermal treaters will be decontaminated, demolished and removed. First, the tanks will be lowered to the ground after determining that no liquid remains inside. The treaters will be fully

examined externally and vented through available portals. Following examination and venting, insulation will be stripped from the exterior, and the tanks will be dismantled, either by direct removal of panels, or by cutting the structure. After the structure has been sufficiently dismantled, pieces will be decontaminated prior to removal from the site for recyclying or, if necessary, disposal.

iv. **Soil Excavation:** Soil excavation will begin after the redwood tanks on the east side of the site have been removed. Soil from below the tanks will initially be removed based on visual examination for the presence of extensive petroleum staining and screening with a FID (see investigation procedures above). During excavation, soils removed from the ground will be surveyed for NORM. The excavated soil will be temporarily stockpiled on site (on 6-mil polyethylene plastic sheeting, and covered with plastic to prevent movement from wind and/or rain) for staging or loaded directly onto transport trucks. Based on screening of the soils, it is assumed that all soils will be removed to a licensed landfarm facility.

Following the excavation of soils from below the tanks, excavation will continue at the direction of the SES/Bay West site manager based on headspace field screening using the FID as described for the investigation procedures. When the limits of contaminated soil have been determined, excavation will be completed. As directed in the RFP, the vertical limit of excavation will be five feet below the ground surface.

As trucks enter the site for transport of the excavated soil to landfarming facilities, it will be necessary to monitor them to assure that possible outside NORM does not contaminate soil or other materials from on-site. The landfarm and disposal facilities have zero tolerance for accepting NORM-contaminated materials.

Trucks returning to the site will transport clean fill soil for placement into the excavations. Soil will be checked on delivery to assure that it is of acceptable quality, including provisions for no contamination by organic compounds or NORM. Clean soil will be stockpiled in a secured area upwind and separate from stockpiled excavated soils. When excavation of an area is complete, the clean soil will be placed into the excavation and graded with a slight positive gradient with sufficient compaction to minimize settling after completion of the project. Soil quality standards for backfill will be established by SES and the EMNRD-OCD during the kickoff meeting at the beginning of the project.

When the removal of all structures and contaminated soil is completed, and all excavations have been backfilled, the site will be final graded, maintaining a slight positive grade over formerly excavated areas. It is important that the soil and the area as a whole be stabilized to protect against wind and rain erosion. A native seed mix recommended by SES range ecology experts will be planted to establish vegetative cover and erosion control.

4. Quality Assurance Plan

The Quality Assurance Plan will present provisions for assuring accurate data collection from field screening to laboratory analysis and interpretation. The plan will include instrument calibration procedures and documentation, sample collection quality assurance, including duplicate samples as necessary, and laboratory quality assurance. All laboratory analyses, including radiochemical analyses, will use USEPA analytical protocols and QA/QC guidance and reporting. EDI will provide a quality assurance plan for NORM surveys.
The Quality Assurance plan will also provide SES's protocol for document quality control reviews and documentation.

5. Health and Safety Plan

The Health and Safety Plan will be developed so that all persons working at the site will be aware of potential hazards, including chemical and radiological exposures. The plan will provide information for site worker screening for radiation exposure, monitoring for volatile vapors, personal protective equipment use (Level D is expected, but the plan will also account for possible Level C protection), handling of metals and wood that could present injury, and equipment and personal decontamination.

The Health and Safety Plan will also describe provisions for site security, internal controls, and checkpoints. Site security will be maintained by fencing and locking the facility gate at the entrance to the site each night. The project trailer on site will be used for storage of small equipment and instruments, and remain locked when crews are not present on site. Large equipment will be decontaminated between the demolition and removal of each tank, and at the end of each day, and parked in a specified area for lockdown each night.

Internal controls at the site will include staging areas for stockpiling of relic materials to be recycled, soils and tank bottoms segregated by waste content, and separate wood and metal stockpiling areas. The stage areas will be detailed in the project plan. Internal controls will also include truck loading areas and equipment and personnel decontamination areas. Active work areas will be clearly delineated. Excavations will be taped off at the end of each day or when inactive but not backfilled.

A checkpoint will be maintained at the gate for all incoming trucks. Trucks may not enter the site until they have been surveyed for NORM and incoming soil is checked to assure that it is clean. All persons entering the site must check in with the field manager and review the site-specific health and safety plan. A site safety meeting will be held every morning before beginning work for all personnel. Daily workplans will be reviewed during the meeting, and safety issues will be discussed.

Each subcontractor will be responsible for their own health and safety plans, but must follow the minimum plan established by SES and Bay West. The subcontractor that will decontaminate steel tanks will be required to provide a health and safety plan for their personnel, including provisions for confined space entry, if necessary.

Exception to the Scope of Work

Our proposal is submitted based on the limited knowledge available about the Goodwin Treating Plant site. Critical information allowing a thorough and accurate proposal of costs to complete this project is not available, and our estimated costs are submitted based on information provided by the EMNRD-OCD and from a site visit. Our proposed project approach and estimated cost does not truly represent the scope of work we believe needs to be accomplished before removal and disposal of the liquids and solids from the tanks on site can be accomplished. From information we have learned about the Goodwin Treating Plant, we believe the following amendment to our proposed project approach should be implemented.

1. Conduct a thorough characterization of the contents of each tank. The oil treatment processes at this site may have resulted in concentrated levels NORM, metals, semi-volatile organic compounds (SVOCs), including polynuclear aromatic hydrocarbons (PAH's), and possibly volatile organic compounds (VOCs). The characterization of each tank would include:

    a. Characterization of the physical phases of the contents of each tank, that is, determine the nature of materials as liquid, sludge, and/or solids, and their densities and volumes.

    b. Characterization of the chemical constituency of the materials in each tank. This would include sample analyses for RCRA metals, SVOCs, VOCs, and TPH, and a NORM survey. This will require stratified sampling in tanks in which materials consist of multiple-phased products (liquid, sludge, and/or solids).

2. From the information obtained from step 1, determine the nature and volumes of the materials present in the tanks.

3. Evaluate the most appropriate and efficient methods for removing products from the tanks. Assess methods of waste minimization to reduce the volume of materials requiring disposal.

4. Contact licensed disposal and/or treatment facilities, including recycling facilities, to coordinate logistics for the final disposition of the products removed from the site. Work with the facilities and transporters to obtain necessary permits and fee assessments. Note that the State of New Mexico is part of the Rocky Mountain Nuclear Compact. Disposal of NORM-contaminated materials outside of the compact region may require additional permits and fees.

5. Re-evaluate the scope of work and associated cost estimates to revise budgets and project plans.

6. As noted in the project approach and plan, while not part of the scope of work, we propose that final site preparation and seeding be included as part of the scope of work.

We believe this process would require approximately four to six weeks to complete before the remainder of our project approach and plan could be implemented. An estimated cost for this process is provided in Offer Amount section of this proposal.

Project Team Experience and Qualifications

SES and Bay West provide excellent qualifications for the performance of this project. Summaries of our team's corporate and staff experience are provided here.

Corporate Experience

The SES/Bay West team has extensive experience in all aspects of investigation, demolition and remediation at sites across the country, including numerous projects involving demolition and remediation at oil and petroleum treatment and storage facilities. This corporate experience will be of great value for completion of the Goodwin Treatment Plant investigation, cleanup, and remediation. As with any company, our capabilities are provided in the experience of our staff. The combined staff of SES and Bay West, particularly the staff assigned to this project, have worked together for as many as 15 years and bring outstanding experience in the demolition and remediation of petroleum-contaminated sites, among other environmental restoration projects.

Corporate experience includes:

- Removal of 12 USTs at the Minnesota Air National Guard's airport facility. The project included excavating approximately 2,000 cubic yards of fuel-contaminated soil impacted by leaking USTs. Work also included site restoration, such as sodding, seeding, and backfilling.

- Completed more than 100 tank-related projects for a confidential client, including UST/AST closures, replacement, installation, cleaning, and investigation. Specific projects have included the following:
  - *Brownwood, TX* - cleaning, removal, and closure of a 100,000-gallon fuel oil AST.
  - *Tonawanda, NY* - specification, installation, and operation of a system for inerting hazardous contents of a 20,000-gallon carbon disulfide AST.
  - *Bedford, IL* - decomissioning, excavation, upgrading, and installation of USTs, and installation of a spill containment system.
- Cleaning/decontamination of a 500,000-gallon, 60-foot-diameter aboveground storage tank containing #6 fuel oil. The project took place in winter, which required heating the sludge to liquefy and remove it. Containerized the waste materials, manifested the containers, and coordinated transportation and disposal of the materials. A total of 13,000 gallons of petroleum waste were removed.

- Completed the investigations and closure of 10 USTs at an aircraft maintenance facility at the Minneapolis/St. Paul International Airport.

- The removal of four chemical tanks at Tinker Air Force Base in Oklahoma, each with a capacity of 80 cubic yards. These bins contained alum, lime, and urea that were formerly used in the facility's industrial wastewater treatment plant (IWWTP). Emptied and decontaminated the tanks and then dismantled the tanks for disposal to a steel recycler. Removed 400 linear feet of associated piping, and coordinated disposal of the tanks, piping, chemicals, and rinsate waters.

- Supporting the cleanup of the FUSRAP site in St. Louis, Missouri, providing health and safety oversight, engineering support, and field resources. This site was used by Malinkrodt during the Manhattan Project to dispose of low level radioactive waste. Project activities include the further delineation of contaminated areas, the excavation of contaminated soils, and the transport of contaminated soils via railcar to EnviroKleens disposal facility in Utah.

- Bay West is a subcontractor on a Pre-Remediation and Remediation Environmental Services contract covering the western US for the U.S. Bureau of Reclamation

- Investigation of a rail car cleaning facility in Kansas City, Kansas. Surface water, soil and groundwater were sampled for VOCs, TPH, and PAHs. Groundwater was sampled from existing monitoring wells. Subsurface soil was sampled to 15 feet below ground surface using a hydraulic probe sampler.

- Provided detailed soil characterization and feasibility studies for the restoration of drastically disturbed and contaminated soils at a large mine. Subsurface soil was sampled using a hydraulic probe sampler.

- Provided expert service to a steel manufacturer in Missouri regarding remediation of contaminated facilities. Conducted detailed waste evaluation of several waste streams to determine if the wastes were hazardous.

- Conducted extensive drilling and monitoring well construction and sampling to assess groundwater contamination from waste lagoons in Kansas.

- Provided expert services to assess environmental damages resulting from railroad operations in southern and northern New Mexico related to fire and derailment.

- Performed 18 task orders since 1995 for the U.S. Army Corps of Engineers (USACE), Kansas City District, including excavation and debris disposal; stream bank stabilization; AST upgrades; soil vapor surveys; UST removals, and PCB transformer removal.

Staff Experience

We feel that a particular strength of our team is the experience and qualifications of our proposed key staff. Our team staff assigned to this project bring outstanding experience in the demolition, investigation, and remediation of petroleum-contaminated sites, and in other environmental restoration projects. The SES/Bay West team's proposed staff includes:

Mr. Ted Hartsig, C.P.S.S.
Project Manager
SES

Mr. Hartsig is a soil scientist with more than 20 years of environmental experience. His experience includes but is not limited to the following:

- Project Manager for the demolition and environmental restoration of the Base Central Heating Plant Fuel Storage and Delivery System and for the main Fuel Storage Area (POL Area) at the former K.I. Sawyer Air Force Base near Marquette, Michigan. This project included the demolition and disposal of both underground and above ground fuel storage and delivery systems, including recycling of salvageable material, and the environmental restoration of contaminated soil. The project was completed under very tight time constraints and restrictive budgets, requiring close coordination and management of subcontractors, disposal facilities, materials procurement, and client and regulatory agencies.

- Project manager for the RCRA facility investigation of Sandia National Laboratory's Mixed Waste Landfill. The landfill contained thousands of tons of radioactive and mixed waste in unlined pits for more than 30 years. The project involved a multiple phased investigative approach employing monitoring well nests, deep soil borings for subsoil sampling and characterization, surface soil sampling, and air sampling activities.

- Project manager for the investigation of soil and groundwater contamination and removal of 87 underground storage tanks for a major U.S. lumber retailer. This project included the investigation and remediation of petroleum contamination in groundwater in Albuquerque and involved the design and implementation of soil venting and vapor extraction techniques.

- Provided technical support and advisement for the remediation of petroleum contamination in complex karst formations. The remedial effort involved the successful application of air stripping, soil venting, and biological degradation techniques.

- Contract program manager for the Sandia National Laboratory RCRA Corrective Action/ Environmental Restoration Program. This project entailed coordinating RFI/CMS activities for more than 100 hazardous and radioactive waste sites.

- Managed the assessment, investigation and remediation of complex soil and groundwater contamination from 75 years of "back door" solvent disposal and leaking underground storage tanks in Oconomowoc, Wisconsin.

- Site manager for the remediation of soil and groundwater contamination resulting from a catastrophic paint warehouse fire. Oversight of monitoring wells installation, soil sampling, debris removal, and remediation involving air stripping of volatile compounds from soil/groundwater, product extraction from waterways, and vacuum extraction of free product in the soils.

Mr. John Parks, P.G.
Investigation Manager
SES

Mr. Parks has more than 25 years of experience in managing and conducting hazardous waste site and petroleum contamination remediation projects. Mr. Parks will be the geologist on site for the subsurface investigation and groundwater monitoring well installation at the site. His experience includes:

- Technical oversight of the RCRA corrective action of a large refinery in Coffeyville, Kansas, including product recovery, groundwater treatment, excavation of metals-contaminated soil, and landfarming of oil-contaminated soils.

- Oversight of remediation of an oil refinery near Arkansas City, Kansas. This project included groundwater recovery and treatment, thermal treatment of oil-contaminated soils, landfarm treatment of contaminated soils, and product recovery from the aquifer.

- Oversight and technical advisement of bioremedial corrective action for petroleum and solvent contaminated soils in Kansas City, Missouri.

- Investigation of an abandoned coal-gasification plant in eastern Iowa to determine the nature and extent of contaminated soils and groundwater, including contaminants from numerous leaking underground storage tanks.

- Hydrogeological and geophysical evaluations of hazardous waste sites including designing, installing and sampling monitoring-well networks; conducting soil gas surveys using portable field instrumentation; and conducting geophysical investigations involving magnetometer, electromagnetic conductivity, seismic refraction and ground-penetrating radar surveys.

- Extensive soil gas investigations in the central U.S., including the characterization of extensive TCE contamination of groundwater near Wichita, Kansas, and solvent-contaminated groundwater in Norfolk, Nebraska. These projects involved collecting soil gas samples from hundreds of locations and then analyzing these samples in the field using a gas Chromatograph (GC) set up in a mobile laboratory. Groundwater, surface water and soil samples also were collected during these investigations.

Mr. Patrick Splichal, C.P.S.S.
Quality Assurance Manager.
SES

Mr. Splichal is a soil scientist with more than 10 years of experience in conducting environmental investigation and remediation projects, with particular expertise in soil analytical chemistry and data quality. Mr. Splichal is expert in use of EPA analytical methods and helped author field analytical screening standard operating guidelines (SOG) to determine VOCs, semivolatiles, PCBs, pesticides and metals in soil and water samples. He has extensive experience in site investigations using field analytical laboratory equipment and interpreting its data. His experience includes:

- Managed and operated a mobile laboratory on several projects and has conducted analyses of soil gas, soil and groundwater for the following compounds: gasoline, diesel fuel, BTEX components, chlorinated solvents, aromatic and chlorinated VOCs, heavy metals and PCBs.

- As a result of the experience gained evaluating and using innovative monitoring technologies, Mr. Splichal authored a manual and served as an instructor for a "Field-Based Site Characterization Course." This course has been taught in both a three-day and one-day version since 1997 on behalf of the EPA.

- Mr. Splichal performed environmental site inspections and on-site sample analyses using a mobile laboratory at hazardous waste sites nationwide.

- Mr. Splichal developed the USEPA method for analyzing metals in soil using X-ray fluorescence (XRF) field techniques.

- Principal investigator for an evaluation of portable x-ray fluorescence (XRF) analyzers and direct-push technologies, overseeing potentially responsible party field work and laboratory operations, and preparing and technically reviewing documents.

Mr. Keith Brown
Health and Safety Manager
SES

Mr. Brown has10 years of environmental management experience at hazardous waste sites including petroleum and coal tar cleanup projects. His experience includes:

- Environmental site investigations at more than 100 sites nationwide. He has collected soil, soil gas, and groundwater samples using a variety of technologies; designed and installed groundwater monitoring wells; and conducted on-site chemical analyses.

- Project manager on a work assignment for conducting preliminary assessments at five former manufactured gas plants throughout EPA Region 7.

- Oversight of the removal of contaminated soil and the containment and removal of released product from the Ohio River and surrounding slough areas at a train derailment site located outside Cairo, Illinois. For this project, he was responsible for the collection of confirmation surface soil and water samples to verify site conditions for the removal of contaminated soils and surface water.

- Oversight on the removal of thousands of cubic yards of contaminated soil at a site on the Jicaria Apache Indian Reservation in northwest New Mexico, for proper disposal according to federal, state, and local regulations.

Phil Dula, P.G., C.H.M.M
Remediation Manager
Bay West

Mr. Dula has more than 20 years of environmental management experience, including oil exploration for Shell Oil Company. His technical expertise is in the initial evaluation of site environmental problems and the development and implementation of cost-effective methods of remediation. Through his experience, he has overseen the completion and/or implementation of more than $20M of environmental services under both cost reimbursable and firm fixed price contracts. He has managed programs and projects for the USACE and US EPA Regions VI and VII, including an ARCS contract. He has completed environmental projects in 12 states throughout the Midwest, Southeast, and Northeast. This experience makes him a valuable additional to this contract team.

Mr. Dula's experience includes:

- Management of the demolition of two 250,000-gallon, reinforced concrete, aircraft fuel underground storage tanks at the former Olathe Naval Air Station, Gardner, Kansas.

- Management of UST removals and closures at several sites throughout the four-state area. The largest project involved removing 54 fuel oil tanks. Other sites included minuteman missile sites. Work also included building demolition and abatement of asbestos associated with older boilers.

- Direction of the completion of 60 preliminary assessments, 28 RCRA facility assessments, 42 site investigations, 45 site inspection prioritization's, and 5 fully documented HRS packages under a USEPA ARCS Region VI contract

Mr. Keith Ellis
Site Manager
Bay West

Mr. Ellis has more than 22 years of environmental investigation experience serving as site supervisor, field technician, and equipment operator. He is trained to operate heavy equipment including backhoe, trackhoe, loaders, and dozers. He has participated in sampling programs for water and sludge from surface impoundments, subsurface soils, surface water and ground water. His background includes working as industrial hygiene technician at Tinker Air Force Base, Oklahoma, serving as a health and safety/remediation technician for Foster Wheeler Environmental Services, and working as both a commercial driver and aviation structural mechanic. In addition Mr. Ellis was a H&S Specialist at the SLAPS site in St. Louis, Missouri, and provided management of the excavation of soils contaminated by low levels of radioactive compounds.

Mr. Ellis' experience includes:

- Management of the removal of four, 250,000 gallon ASTs containing JP4 jet fuel and one 250,000 gallon fuel oil AST at Richards Gebaur AFB, Belton, Missouri.. The project involved the removal of any remaining product and tank bottoms, and the decontamination of the AST interiors under confined space protocols, and the dismantling and disposal of the tanks. In addition, Mr. Ellis managed the transportation and disposal of the residual product and tank bottoms. All wastes were fully characterized before disposal.

- Mr. Ellis served as environmental technician during the excavation of approximately 500 cubic yards of lead-contaminated soil at a former foundry/research site. He performed sampling and equipment operation.

- Mr. Ellis was Bay West's site safety & health officer at the St. Louis Airport project site. Work involved the cleanup of a FUSRAP/Superfund site. Mr. Ellis performed hazard evaluation and monitoring, tailgate safety meetings and coordination with the safety & health manager

- Mr. Ellis performed health and safety services for various companies, utilizing his health and safety expertise. He was responsible for monitoring, sampling, and documentation of soils, water, and excavated materials. Mr. Ellis monitored the excavation of soils using backhoes, trackhoes, and D6 track loader for health and safety compliance. He was responsible for collection of ground water data for RCRA quarterly sampling events; surface and subsurface soil investigations; geological logging of ground water monitoring well installation; slug testing, and documentation of these activities. Mr. Ellis also conducted monitoring for the presence of toxic substances using a photoionizer detector and LEL/Oxygen monitor.

In addition to the qualifications of our companies and of the personnel we are proposing for this project, we have identified several contractors, listed earlier in this proposal, that will provide key assistance with this project. These subcontractors are nearly all located in Lea County, New Mexico, and are familiar with operations of the local oil industry. Their knowledge and expertise will be highly regarded for successful advisement and completion of this project.

RESPONSE TO BUSINESS SPECIFICATIONS

We have reviewed the sample standard State of New Mexico Professional Services Agreement provided with the RFP, and the Regulations Governing the Per Diem and Mileage Act (Rule 95-1). We take exception to the following regarding these standards:

1. Regulations Governing the Per Diem and Mileage Act

   We feel that personal mileage and per diem should be reimbursed at the Federal rate of $0.315 per mile and $26.00 per day.

2. State of New Mexico Professional Services Agreement

   a. Item 2-A: Because of the nature of this project with given uncertainties, we prefer a contract mechanism as provide in your Option 3 (Time and Materials). We understand that this contract would be on a Not to Exceed (NTE) basis. A time and materials contract will provide the EMNRD-OCD project manager flexibility for addressing changes in the scope of work as well as addressing unforeseen site conditions and/or volume of materials to be disposed.

   b. Item 2-E: We understand and accept the condition that within 15 days of receipt of written notice (invoice) from the contractor the EMNRD will issue a written certification of completion or acceptance for payment, and then payment will occur within 30 days after that (45 days total until receipt of payment). We take exception to the condition that the EMNRD has 15 days to determine the acceptability of an invoice, and if unacceptable, a letter of exception explaining the defect or objection to the services will be sent within 30 days. If exception is taken to invoices, we require written notification within 7 days so the issues may be clarified or rectified at the earliest possible time.

   c. Item 7-A: We have listed sub-contractors and their associated cost estimates in our proposal based on their responsiveness to our requests and our working relationships. For this proposal, a competitive bidding process was not undertaken, and thus, we cannot provide documentation of such a process.

   d. Item 7-C: See No. 1 above.

   e. Item 23-A.1 (Duty to Insure) Our comprehensive professional liability insurance covers both performance liability for errors and omissions as well as public liability (including property and personal injury). We are amenable to naming the EMNRD as co-insured on this policy for the term of this agreement for this project.

PROPOSED OFFER

As requested in the RFP, we have developed an estimated cost to complete this project as described by the EMNRD-OCD. This estimated cost is provided by tasks as listed in the offer, followed by a total turnkey cost. In addition, we have provided supplemental rates, again as requested by the RFP. In this section, we also provide additional estimated costs for your consideration for alternative approaches for this project.

Estimated Cost by Task

Technical Specification		Item Cost
1.	Sub-surface contamination investigation based on air rotary.	$ 11,013
2.	Well completion based on 60-foot well.	$ 6,098
3.	Groundwater sampling and analysis.	$ 1,728
4.	NORM requirements.	$ 61,083
5.	NORM survey and lab analysis.	$ 9,267
6.	Tank fluid removal and disposal	$ 99,381
7.	Tank solids removal and disposal	$314,068
8.	Tank and equipment removal.	$101,829
9.	Near-surface contamination investigation based on 35 lab samples	$ 42,874
10.	Contaminated soil removal based on 1,450 cubic yards.	$ 46,547
11.	Backfilling excavations with back-hauled clean soil.	$ 45,792
12.	Phase 1 Report	$ 3,611
13.	Phase 2 Report	$ 4,896
14.	Phase 3 Report	$ 7,409
Estimated Total Cost		**$755,596**
New Mexico Gross Receipts Tax	(6.376% for Dona Ana County)	$ 48,177

Total Turnkey Cost

Based on the estimated costs above plus the New Mexico Gross Receipts Tax, our proposed total turnkey cost for this project is **$ 803,773**

Assumptions

1. Estimated costs for all of the technical specifications listed in the Estimated Cost by Task include project management, workplan, health and safety plans, and QA/QC plans, and mobilization/demobilization to and from the site.

2. Quality assurance for samples collected assume one duplicate sample for every 10 samples collected. Monitoring well sample includes the primary sample, plus one duplicate.

3. Assume only one sample collected for radioisotope analysis.

4. Near-surface contamination investigation is based on costs for screening of soils as they are removed, followed by sampling to determine limits of excavation.

5. Backfilling excavations with clean soil includes final grading, preparation, and seeding with native grasses to restore and stabilize site.

6. Tank fluids and solids removal costs include PID and NORM screening of materials as they are removed.

7. Contaminated soil removal includes cost for screening trucks entering the site and screening removed soils for NORM.

8. If shallow rock is encountered during excavation, excavation of caliche or rock material will be $14 per cubic yard.

Supplemental Rates

Description of Service	Rate (cost/unit)
Air rotary rig equipped to perform all work as set in the RFP specifications	$ 317.50 per hour
Bentonite pellets	$ 0.11 per pound
Blank 2-inch PVC riser	$ 1.95 per foot
Move-in, move-out charges	$ 362.50 per hour
Water truck – Capacity 20 bbls.	$ 17.25 per hour
Backhoe – minimum 8 hours applicable	$ 14.40 per hour

Supplemental Rates (continued)

Trackhoe (Deere 790) – minimum 8 hours applicable	$ 99.00 per hour
Dozer (Cat D6) – minimum 8 hours applicable	$ 66.00 per hour
Trucking – minimum 2 hours applicable	$ 60.00 per hour
Front-end loader (Cat 930) – minimum 8 hours applicable	$ 48.50 per hour
Senior Scientist	$ 85.00 per hour
Environmental Technician (Scientist)	$ 60.00 per hour
Certified NORM technician/scientist	$ 52.00 per hour
Labor	$ 34.00 per hour
Photo-ionization detector	$ 45.00 per day
Chloride laboratory analysis (soil)	$ 24.00 per sample
TPH laboratory analysis (soil, method 8015)	$ 99.00 per sample
BTEX laboratory analysis (soil)	$ 66.00 per sample
Contaminated soil offsite landfarm remediation cost	$ 14.35 per cubic yard
Back-haul clean soil	$ 3.00 per cubic yard
NORM contaminated soil offsite disposal, including trucking cost	$ 872.00 per cubic yard
Produced water and non-NORM liquids disposal	$ 3.00 per bbl

Additional Cost Information

The following are estimated costs for services not in the scope of work, but proposed as alternative approaches for completion of this project.

9. We presented an exception to the scope of work in our Response to Technical Specifications Section of this proposal in which we state and propose to conduct sample collection and RCRA characterization of the tank bottoms and liquids for disposal. Waste characterization is necessary for any permitted disposal and/or treatment facility and would involve the Toxic Characteristics Leaching Procedure (TCLP) for SVOCs, VOCs, metals, and pesticides/herbicides.

   Assuming a sample of solids from each tank is collected, or a maximum of 18 samples (fewer samples if we combine contents from some tanks), a RCRA waste characterization would cost $ 471 per sample or a total of $ 8,478 for characterizing tank bottoms for disposal.

   Assuming a sample of liquid from each tank listed as containing liquids is collected, or 12 liquid samples, a RCRA waste characterization would cost $ 383 per sample or a total of $ 4,596 for characterizing the liquids for proper disposal.

10. Removal of the Tanks from the facility includes recycling of the metal tanks, and disposal of the redwood tanks. Lotus L.L.C. in Andrews, Texas, will be able to take any wood contaminated by NORM. We were not able to secure a specific cost based on their treatment of wood. Any NORM-contaminated wood will be pressure cleaned by them, reducing the volume of material that would otherwise be disposed. Their cost of disposal of NORM is $150 per 42-gallon barrel. Therefore, cleaning and stripping NORM-contamination from wood would greatly reduce the ultimate disposal costs for these materials.

11. Because using a PID for field screening soils may not be reliable, and that even a flame ionization detector (FID) may not adequately screen low concentrations of petroleum hydrocarbons, we are proposing using the PetroFLAG hydrocarbon screening process for determining the limits of excavation during the near-surface soil investigation/soil excavation. This procedure is very accurate to approximately 50 ppm TPH in soils. The cost per screening sample will be $25 each. Assuming 100 screening locations during the soil investigation/excavation, the cost for this method of determining the limits of excavation (field screening procedure only) would be approximately $2,500. The method is USEPA approved, and may reduce the total number of samples that would be required for laboratory analysis and well as instrument use charges.

Additional Terms and Conditions

SES inserts the following condition to the contract presented by the State of New Mexico:

Force Majeure:

The Consultant shall not be responsible for any delays in performance by reason of strikes, lockouts, accidents, acts of God, or other causes beyond the Consultant's reasonable control, including, but not limited to, delays resulting from shortages or unavailability of labor at established area wage rates; delays caused by failure of the Client or Client's agent to furnish information or to approve or disapprove the Consultant's work promptly; or delays due to late, slow, or faulty performance by the Client, other contractors, or governmental agencies, on work precedent to or concurrent with the performance of the Consultant's work. In case of any such cause or delay, the period of performance of the work shall be extended accordingly, and the Consultant shall be entitled to reasonable additional compensation for the costs of any delays attributable to the Client or the Client's agents or contractors.

SES Qualifications

INTRODUCTION

Environmental management is becoming more critical in the design and construction of golf courses. From the aesthetics of the local flora and fauna to the challenges presented by the local topography and watercourses, the environment is a natural component and often the attractiveness of successful golf courses. In recent years, particularly with the rising popularity of the game, increasing attention has been drawn to more comprehensive environmental management associated with golf courses. In many areas local, state, and federal agencies require numerous environmental permits and documentation be completed before a course can begin construction. Concerns of water quality, irrigation, and off-site impacts are resulting in the need for environmental controls to be built into and part of the course operations and maintenance. Sustainable Environmental Solutions, Inc. (SES) has the capability, and the experience, to assist you in effectively meeting the new environmental challenges facing golf course development and management.

Our objective is to assist clients with site selection, environmental documentation, design, and implementation of environmental features and controls for new and existing courses. In achieving this objective, we will help you complete construction of your course within budget and on time, assuring your vision of the course is realized, and your customer's enjoyment of the game.

Our company provides services for golf course development and management in the following areas:

- **Site selection, including identifying markets, economic incentives, and environmentally "friendly" locations;**
- **Environmental assessment and permitting;**
- **Development of integrated environmental management plans, including turf management, irrigation and water conservation, nutrient management plans, and pollution prevention systems;**
- **Wetlands management, including delineation, mitigation, and creation;**
- **Land restoration/reclamation;**
- **Land management, including soil and range management;**
- **Stormwater management;**
- **Geographic Information Systems development and management; and**
- **Environmental management, policy and systems training.**

Our professional team has the unique experience and capability to be your partner in environmental management to support your course. We have a successful track record for developing effective and innovative environmental strategies for our numerous clients in a variety of industries. Most important, our expertise is combined with a corporate philosophy that places customer service and quality as its highest priorities. Our commitment to this philosophy is supported by our recent 100 percent corporate growth, which was primarily because of repeat business.

If you have any questions regarding our services or would like to contact us, please call Frank Bryant or Ted Hartsig at 1-800-897-1163, or visit our web site at www.ses-corp.com.

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ENVIRONMENTAL REMEDIATION

Sustainable Environmental Solutions, Inc. (SES) has the capabilities and experience to provide practical environmental solutions to clean up contaminated sites. Our approach is not one of excessive study and overblown remedial strategies for fixing contamination problems. Instead, it enables us to focus on the environmental risks posed by the problem and to determine the most efficient and effective means of remediation. To accomplish this, we use an "end-focused" approach to environmental repair. We start by defining the client's goals and the environmental risks that may be posed by the problem, and then we work with the client to develop remediation objectives focused toward those goals. Using this approach, only information and remedial alternatives relevant to those objectives are evaluated and promoted.

The success of our staff in environmental remediation has been excellent. Our staff has used innovative ideas for remediating sites that include using common agricultural chemicals to stabilize metals-contaminated sites, effectively demonstrating risk-based corrective action levels for site closure, and using institutional controls to eliminate exposure pathways and minimize the need for expensive treatment and/or removal programs.

The experience of our professionals includes:

U.S. EPA Superfund Innovative Technologies Evaluations.

U.S. Army Corps of Engineers HTRW projects, including RCRA corrective actions and CERCLA response actions.

State-led remediation of petroleum-contaminated sites, PCB contamination, and cleanup of chlorinated-hydrocarbon contaminated groundwater.

Development of human health and ecological risk assessments.

SES also has the ability to provide effective, expert oversight of remediation projects. As a result of our experience, clients have been able to save millions of dollars from the projected cost of cleaning up impaired sites. Costs can skyrocket when remediation contractors use more equipment than necessary, or institute excessive treatment measures.

When properly accomplished with a well-developed plan, remediation of contaminated sites can often be completed within time constraints and under budget. More important, with the oversight experience that SES offers, the job will get done right and the site closure can be accomplished sooner.

LAND RESTORATION AND MANAGEMENT

A growing society impacts its environment in profound ways. One of the most extensive impacts is from the disturbance of the land, from the mining of natural resources to the tilling of soil for crop production. Land disturbance is also found within the urban and suburban environment with the construction of new buildings, roads, recreational areas and other activities that accompany population and economic growth. The natural environment within which we build can be restored, however, and the cost of site management following soil disturbance can be reduced through proper soil stabilization and erosion control, and developing a productive environment for establishing plant growth. SES provides the expertise to maximize our resources to restore the balance of the land and minimize your land management costs.

Understanding the relationships of soil, water and plant growth are critical for successful land restoration. Restoring the balance of the natural environment takes a solid understanding of the soil structure, the flow of water, and why plants grow where they do in nature. Our scientists are expert in understanding these relationships and have used this knowledge to successfully restore drastically disturbed land throughout the United States.

SES has provided primary assistance in the restoration of previously mined lands. Our professionals characterized site conditions and developed corrective action plans for restoring the site to its pre-mine condition.

Our professional experience includes:

- Remediation of contaminated sites
- Land restoration and management during and after massive building and structural demolition
- Surface mine reclamation
- Erosion sedimentation control planning
- Wetland mitigation
- Rehabilitation of poor or spent soils

Our capabilities can be used to optimize your resources when restoring your land to its fullest capability for revegetation, water conservation, and surface- and stormwater management. Let us help you restore your site to its fullest capability.

THEODORE HARTSIG, C.P.S.S.

Senior Soil Scientist

Position:
Senior Project Manager
Senior Soil Scientist

Expertise:
Soil Science
Natural Resource Management
Environmental Assessment
Site Assessment
Site Restoration/Remediation
Wetlands Mitigation,
Restoration, Delineation
Environmental Chemistry

Education:
B.S. in Biology, Northern Arizona University, 1978
M.S. in Soil Science/Agronomy, Kansas State University, 1984
Ph.D. Studies, Kansas State University and Clemson University

Organizations:
Soil Science Society of America
American Society of Agronomy

Registration:
Certified Professional Soil Scientist, 1987
Registered Professional Soil Scientist, Minnesota, 1998

Professional Memberships:
Soil Science Society of America
American Registry of Professionals in Agronomy Crops, and Soils
American Society of Agronomy

Mr. Hartsig is a soil scientist and senior project manager with Sustainable Environmental Solutions. He has more than 20 years of experience including soils evaluation and management for site restoration and revegetation, including mine-site restoration, wetlands delineation and mitigation, wetlands mapping, and resource evaluation using remotely sensed data. In addition to his project-related experience, Mr. Hartsig has been prominent in addressing soil science issues of national scope, including chairing the committee that established soil science practice standards. He is a founding member of the National Council of Soil Science Examiners, and coordinated an international symposium/workshop addressing hydric soils characterization and delineation. Specific project experience includes: assessing land features and vegetation using multi-band remotely-sensed satellite and aerial data, characterization of mine tailings spoils and feasibility studies for restoration, assessment of post-mine reclamation for bond closure, field mapping of wetlands, and wetlands mitigation and protection.

Mr. Hartsig has technical and managerial experience in the completion of a wide variety of environmental projects, including environmental remediation, restoration of disturbed lands, land use siting, and human health and ecological risk assessment. A listing of Mr. Hartsig's experience includes the following:

U.S. Army Corps of Engineers, Omaha District
Project Manager for the demolition and environmental restoration of the Base Central Heating Plant Fuel Storage and Delivery System and for the main Fuel Storage Area (POL Area) the former K.I. Sawyer Air Force Base near Marquette, Michigan.

Sandia National Laboratories, Albuquerque, New Mexico.
Project manager for the RCRA RFI/CMS of a mixed waste landfill. The landfill contained thousands of tons of radioactive and mixed waste in unlined pits for more than 30 years.

Payless Cashways, Inc. Western and Midwest United States.
Project manager for the investigation of soil and groundwater contamination and removal of 87 underground storage tanks for a major U.S. lumber retailer.

Nestle Corporation, Oconomowoc, Wisconsin.
Directed the assessment, investigation and remediation of complex soil and groundwater contamination from leaking underground storage tanks.

Confidential Client, Louisiana
For a confidential client in Louisiana, Mr. Hartsig managed the expert characterization and development of restoration plans for reclamation of a lignite mine. Mr. Hartsig oversaw and assisted with defining issues relating to erosion control, sedimentation control structures, and acid mine drainage.

General Motors Corp. St. Louis, Missouri.
Provided key support and advisement for the remediation of petroleum contamination in complex karst formations.

U.S. Environmental Protection Agency, Region 5
For the Torch Lake Superfund Site near Houghton, Michigan, Mr. Hartsig managed the remedial investigation and feasibility study (RI/FS) of an extensive area of mine tailing deposition.

Confidential Client, Pennsylvania
For a confidential client in Erie, Pennsylvania, Mr. Hartsig evaluated hydric soils conditions to assess site suitability for residential development in contentious wetland areas.

U.S. Army Corps of Engineers, Omaha District
Mr. Hartsig managed and completed key portions of the ecological restoration of sensitive river habitat along the Missouri River at Lower Decatur Bend, Nebraska.

Confidential Client, Chicago, Illinois.
Compiled investigation data, conducted data evaluation and presentation to assess subsurface contamination at former printing facilities for the transfer of ownership of a large property integral to downtown Chicago's economic development plans.

U.S. Army Corps of Engineers, Omaha District
Ft. McCoy RCRA Facility Investigation/Corrective Measures Study (RFI/CMS), Sparta, Wisconsin. Project manager for the RFI/CMS which involved 15 solid waste management units (SWMUs) including pesticide disposal areas and explosive ordinance demolition areas.

Private Service Station Owner, Bethany, Missouri.
Project manager for the emergency mitigation of a large gasoline spill at a regional truck stop.

Sherwin-Williams Company, Dayton, Ohio.
Site manager for the remediation of soil and groundwater contamination resulting from a catastrophic paint warehouse fire.

Yellow Freight Corp. Joplin, Missouri.
Site manager for the soil gas investigation of petroleum contamination at a major trucking terminal.

Confidential Client, Milwaukee, Wisconsin.
Provided professional environmental services for acquisition of several properties throughout Wisconsin for a major retailer in accordance with ASTM 1527-94E for environmental due diligence

Chrysler Corporation, Detroit, Michigan
Conducted environmental site assessments for Chrysler Corporation regarding environmental liabilities at dealerships.

Premium Standard Farms, Missouri
For Premium Standard Farms (PSF), Mr. Hartsig co-wrote the first comprehensive nutrient management plan (CNMP) in the United States. The requirements for CNMPs has recently been introduced by the US EPA and the US Natural Resources Conservation Service (NRCS) as primary components of wastewater discharge permits for confined animal feeding operations (CAFOs) throughout the United States. Mr. Hartsig has also served in an advisory capacity through the American Society of Agronomy in development of nutrient management and comprehensive nutrient management programs.

Upjohn Corp., Michigan.
Directed the RCRA CMS for the cleanup of a multiple-unit facility involving disposal sites with PCBs, volatile organic compounds, semi-volatile organic compounds, and high levels of metals.

Cedarburg Light and Power, Cedarburg, Wisconsin.
Provided consulting services for an electric utility identified as a potential responsible party in PCB contamination of the city's central waterway.

Sandia National Laboratories, Albuquerque, New Mexico.
Program manager for Sandia's RCRA Corrective Action/ Environmental Restoration Program. This project entailed coordinating RFI/CMS activities for more than 100 hazardous and radioactive waste sites.

Sandia National Laboratories.
Project manager for the RCRA facility investigation of an abandoned explosives detonation area.

Kansas Army Ammunition Plant, Parsons, Kansas.
Project manager of RCRA groundwater monitoring concerns involving multiple contaminants and close regulatory involvement data interpretation and reporting.

Former Nebraska Ordnance Plant RI/FS, Mead, Nebraska.
Project manager for this project which involved very extensive explosives and PCB contamination over an area of several square miles.

Taos, New Mexico.
Provided technical support and advisement for the investigation of soil and groundwater contamination from methylene chloride.

Kenai Peninsula of Alaska.
Provided key technical management and support for the rapid mobilization of sampling equipment and personnel to investigate extensive petroleum hydrocarbon contamination at several sites. This effort enabled the collection of several hundred soil gas and deep subsoil samples in a very short time period. Also provided process related and sample generation quality assurance (QA) support.

Whiteman and Richards-Gebaur Air Force Bases, Missouri.
Provided key support for planning, sampling, and document production for the investigation of explosive and other hazardous wastes.

Iowa Army Ammunition Plant, Eastern Iowa.
Provided detailed data assessment, quality assurance, and interpretation for the investigation of soil and groundwater wastes and prepared the final report of the investigation findings.

U.S. Environmental Protection Agency, Region 7.
Assisted in the team engineering of the accelerated biodegradation

of poly-aromatic hydrocarbons at a lumber treating site near Alton, Missouri.

Yellow Freight Corp. Arkadelphia, Arkansas.
Project manager for the emergency mitigation of burning hazardous materials.

Yellow Freight Corp. St. Louis, Missouri.
Project manager for the remediation of hazardous, volatile materials spilled near the Mississippi River.

Aurora, Missouri.
Provided technical support and advisement for the U.S. EPA investigation of extensive dioxin contamination.

Fort Smith, Arkansas.
Provided technical support and team management for the U.S. EPA investigation and remediation of extensive PCB contamination.

Midwest United States.
Provided technical assistance and team management for several projects involving the sampling of abandoned or "orphan" drums at various sites.

Liberty, Missouri.
Provided on-site monitoring for the destruction of all existing U.S. supplies of ethylene di-bromide for the U.S. EPA.

Johnson County, Kansas.
Provided technical assistance for the U.S. EPA investigation and removal of hazardous and explosive materials stored illegally in warehouses.

Erie, Pennsylvania.
Evaluated soils criteria, examined soils, delineated wetlands to discern applicability of construction activities in selected areas, providing expert testimony in federal court concerning legality of residential developments.

State of Kansas
For a wetland/wildlife refuge in central Kansas, Mr. Hartsig used remotely sensed data to assess the extent of wetland impacts from excessively dry years.

Ohio, Pennsylvania, Indiana, Kentucky, Illinois, Wisconsin, Iowa, Missouri, and Kansas.
Charted soils series/associations and developed measures to protect soil resources for the construction of natural gas pipelines, including authoring sections of several environmental impact reports for the construction of pipelines in these states.

For a natural gas pipeline extending from western Oklahoma, through Kansas, Missouri, Illinois, and to Wisconsin, Mr. Hartsig identified soil resources, including charting soil series along the pipeline route.

For a natural gas pipeline extending from Indiana through Ohio and Pennsylvania, Mr. Hartsig was the lead soil scientist for identification of soil-related issues for the FERC 7(c) filing.

U.S. Environmental Protection Agency, Region 2
Mr. Hartsig delineated wetland boundaries for the U.S. EPA in central Virginia that were suspected of being adversely impacted by illegal dumping of hazardous wastes.

Mississippi and Arkansas.
Project manager for the environmental damage assessment for unknown stress factors in forest resources owned by a private timber company using remotely sensed and ground verification data.

Kansas Power and Light
For a confidential client in eastern Kansas, Mr. Hartsig utilized remotely-sensed data, including far infrared thermal bands, to assess impacts to wetland areas from cooling water seepage near a major power plant.

Savannah River Nuclear Generating Facility, Georgia.
Managed the mapping of thermal variations and effluent release areas utilizing remotely sensed data.

JOHN PARKS, P.G.

Senior Geologist

Position:
Vice President
Senior Geologist

Expertise:
Geology
Hydrogeology
Environmental Remediation
Site Characterization
Site Restoration

Education:
B.A. Geology, 1974

Professional Organizations:
American Inst. Of Geologists
National Groundwater Association

Certifications:
Certified Prof. Geological Scientist
Certified Prof. Geologist

Registrations:
Registered Geologist
Missouri and Kansas

Mr. Parks has more than 25 years experience performing extensive environmental, geological and geotechnical investigations at sites throughout the country. He has had extensive experience in preparing cost estimates, contracting, and management of very large and complex projects. In addition, he has more than 12 years experience in a wide range of civil engineering projects, including project cost estimating, construction oversight, materials quality control, bidding and subcontracting. He has worked extensively on projects including street paving, bridge building, dam construction, and landfill design.

From 1994 to 1998, Mr. Parks was the Regional Contract Manager for a RCRA Enforcement, Permitting and Assistance (REPA) contract with EPA. For this $7 million contact, he coordinated the assignment of specific projects and was the liaison with the EPA Regional Project Officer. He developed the cost estimates, submitted invoices and conducted the day-to-day management necessary to successfully deliver work products. Prior to that, he worked four years on an EPA RCRA enforcement contract. This work included conducting compliance inspections, operation and maintenance inspections and corrective action oversight at numerous facilities including the U.S. Dept. of Energy – Kansas City Plant, oil refineries, and the Iowa Army Ammunition Plant.

Mr. Parks has worked on several EPA Superfund Innovative Technology Evaluation (SITE) demonstration projects. For example, he aided in the demonstration of the direct push technologies by setting up the demonstration sites. He laid out sampling locations, checked utilities, and conducted geophysical testing at each location prior to the demonstration. He aided in the planning of the demonstration methods and supplied logistical support for the demonstration teams.

Mr. Parks conducted the testing of two passive soil gas technologies. He oversaw the installation methods, the collection of samples, and the evaluation of the test results for the two new technologies. This work was conducted at two National Priorities List (NPL) sites with different physiographic settings; one in Albert City, Iowa, and the other near Denver, Colorado. He ultimately wrote two Innovative Technology Evaluation Reports summarizing the findings from the field testing.

Mr. Parks has conducted hydrogeological and geophysical evaluations of hazardous waste sites during Superfund field investigation activities. This involved designing, installing and sampling monitoring-well networks; conducting soil gas surveys

using portable field instrumentation; and conducting geophysical investigations involving magnetometer, electromagnetic conductivity, seismic refraction and ground-penetrating radar surveys.

Mr. Parks has directed several large soil gas investigations in the central U.S., including the characterization of extensive TCE contamination of groundwater near Wichita, Kansas, and solvent-contaminated groundwater in Norfolk, Nebraska. These projects involved collecting soil gas samples from hundreds of locations and then analyzing these samples in the field using a gas Chromatograph (GC) set up in a mobile laboratory. Groundwater, surface water and soil samples also were collected during these investigations.

Mr. Parks has been instrumental in developing and applying innovative technologies for sample collection. He initiated the first-time use of a hydraulic probe soil-gas collection system at a TCE contamination site in Nebraska. He directed the first-time use of the tension and double ring infiltrometer testing on a hazardous waste site, and designed and built seepage meters for use in collecting groundwater samples that discharge to rivers. He also directed the first time use of a GC for field screening for PCBs at a site in Missouri.

Mr. Parks was project manager on a $1.7 million remedial investigation/feasibility study at the Naval Air Weapons Station at China Lake, California. This work included the preparation of cost estimates, work plans and the direction of a 12 -person field investigation team. As a result of his team's work, the project realized a savings of more than $1 million in project costs based on innovative sampling and analyses strategies. Among these strategies was the implementation of a stratified sampling strategy and the use of an on-site mobile laboratory. He was responsible for monitoring costs, procurement of subcontractors, reviewing invoices and directing a multidisciplinary team of scientists in all project activities.

PATRICK SPLICHAL, C.P.S.S.

Senior Soil Scientist

Position:
Senior Project Manager
Senior Soil Scientist

Expertise:
Soil Science
Soil Chemistry
Contaminant
Fate/Transport
Nutrient Management
Environmental Remediation
Environmental Assessment
Site Assessment
Site Restoration

Education:
B.S. Agronomy, 1989
M.S. Soil Chemistry, 1991

Professional Organizations:
American Society of Agronomy
Soil Science Society of America
Soil and Water Conservation Society
National Groundwater Association

Certifications:
Certified Professional Soil Scientist
Certified Odor Evaluator – Colorado

Mr. Splichal has worked as a soil scientist and environmental chemist since 1991. Recently his work has focused on agricultural areas. Mr. Splichal has provided key support for agricultural/ environmental programs instituted by the National Pork Producers Council (NPPC). This work has involved assisting NPPC in the development and oversight of its On-Farm Odor/Environmental Assistance Program. Mr. Splichal also has assisted in developing a Quality Assurance Project Plan for water quality sampling for a major livestock producer. Mr. Splichal is a Certified Professional Soil Scientist (C.P.S.S.) and a Certified Odor Evaluator.

Mr. Splichal is expert in use of EPA analytical methods and helped author field analytical screening standard operating guidelines (SOG) to determine VOCs, semivolatiles, PCBs, pesticides and metals in soil and water samples. He has extensive experience in site investigations using the Geoprobe system and is adept at operating the field analytical laboratory equipment and interpreting its data. He has been involved with the mobile laboratory on several projects and has conducted analyses of soil gas, soil and groundwater for the following compounds: gasoline, diesel fuel, BTEX components, chlorinated solvents, aromatic and chlorinated VOCs, heavy metals and PCBs. As a result of the experience gained evaluating and using innovative monitoring technologies, Mr. Splichal authored a manual and served as an instructor for a "Field-Based Site Characterization Course." This course has been taught in both a three-day and one-day version since 1997 on behalf of the EPA.

From 1991 to 1998, Mr. Splichal performed environmental site inspections and on-site sample analyses using a mobile laboratory at hazardous waste sites nationwide. This work was performed for EPA; other federal agencies include Department of Defense (DOD) and Department of Energy (DOE); state agencies including the Kansas Department of Health and Environment (KDHE), the Nebraska Department of Environmental Quality (NDEQ) and the Minnesota Pollution Control Authority (MPCA); and for private clients at hazardous waste sites.

As a soil chemist, his experience has included serving as principal investigator for an evaluation of portable x-ray fluorescence (XRF) analyzers and direct-push technologies, overseeing potentially responsible party field work and laboratory operations, and preparing and technically reviewing documents. Mr. Splichal has extensive experience in conducting site inspections (SI) and in analyzing samples for priority pollutants in a mobile laboratory.

From 1992 to 1997, Mr. Splichal was the principal investigator on multiple advanced environmental monitoring systems evaluations for the Superfund Innovative Technology Evaluation (SITE) contract for EPA. During this time, 33 innovative environmental monitoring systems were evaluated. He assisted in preparing the work plans, cost estimates and the demonstration plans; identified sites to demonstrate the technologies, communicated with the technology developers, and arranged for the confirmatory laboratory.

Mr. Splichal prepared the pre-demonstration sampling plans and operated technologies during the pre-demonstration sampling activities. He helped coordinate the demonstration field activities with the field team, which included technology developers and EPA. Based on the field demonstration results, Mr. Splichal helped prepare and review the evaluation reports. After an evaluation of field portable XRF analyzers, Mr. Splichal authored a SW-846 Method for XRF analysis of environmental soil samples, both in situ and ex situ.

Mr. Splichal has managed multiple comprehensive investigations (CI) performed for KDHE. He prepared the work plans and cost estimates, coordinated with subcontractors, and served as the field investigation team leader. The CIs involved collecting soil, soil gas and groundwater samples with a hydraulic probe sampler and on-site analysis with a mobile laboratory using a headspace autosampler, a gas chromatograph and immunoassay test kits. Mr. Splichal performed the on-site analyses, made decisions about the location of sample collection and permanent monitoring wells, and participated in the well development and groundwater sampling.

KEITH BROWN

Environmental Scientist

Position:
Environmental Scientist
Agricultural Specialist

Expertise:
Biology
Environmental Compliance
Site Characterization
Site Restoration

Education:
B.G.S. Env. Science

Mr. Brown obtained a Bachelor of General Science degree in environmental science from the University of Kansas. His principal areas of expertise are environmental site investigation, biology, and health and safety. Mr. Brown has more than nine years of environmental consulting experience, including:

- Site assessment and investigation
- Remedial investigation and design
- Emergency response
- Analytical services
- Environmental/ecological risk assessment
- Environmental compliance and permitting
- Technology evaluation
- Health & safety

Mr. Brown has performed environmental site investigations at more than 100 sites nationwide. He has collected soil, soil gas, and groundwater samples using a variety of technologies; designed and installed groundwater monitoring wells; and conducted on-site chemical analyses.

Mr. Brown has provided key management and oversight in SES's participation in the national On-Farm Odor and Environmental Assistance Program (OFO/EAP). He has provided oversight for more than 23 assessments of odor and other environmental issues, and he has reviewed hundreds of reports generated from the OFO/EAP for technical accuracy.

Mr. Brown conducted preliminary assessments and site screening investigations at hazardous waste sites throughout EPA Regions 5, 7, and 9. He authored reports in support of this field work.

Under the Field Investigation Team (FIT) contract, Mr. Brown was the project manager on a work assignment for conducting preliminary assessments at five former manufactured gas plants throughout EPA Region 7. He also managed the project work assignment for the screening site investigation of the Laclede Coal Gas site (one of the largest in Region 7) located in St. Louis, Missouri. Mr. Brown managed a 10-person team during the sampling phase of the investigation. He wrote all supporting reports, which included the work plan, trip report, data transmittal, and final report.

Mr. Brown also has conducted geophysical surveys using magnetometers and resistivity meters, provided oversight of drilling and environmental sampling subcontractors, prepared

graphics, and final reports in support of field work. Mr. Brown also reviews documents prior to submittal for technical accuracy. Mr. Brown installed 30 soil gas implants for EPA Region 9 as part of the closure requirements for a landfill at the Lemoore Naval Air Station, Lemoore, California.

Mr. Brown has extracted data on two potentially responsible parties located in the San Gabriel Valley in California.

Mr. Brown provided technical and field support for a remedial investigation/feasibility study (RI/FS) at the Adams Plating facility located in Lansing, Michigan, which included the collection of soil gas and groundwater samples. These samples were analyzed on site and the results were used to pinpoint the location of permanent groundwater monitoring wells.

Mr. Brown assembled and configured a GPS base station to differentially correct GPS rover point locations to sub-meter accuracy for the EPA in Region 4. This work was conducted in northeast Alabama on a creek and lake surrounded by dense vegetation. Also, collected fish samples, both predators and bottom dwellers, with use of seine, throw, and gill nets.

Mr. Brown conducted continuous air monitoring and collected confirmation product and soil samples for nine consecutive days at a train derailment site located outside Cairo, Illinois. Responsibilities included overseeing the removal of contaminated soil and the containment and removal of released product from the Ohio River and surrounding slough areas. For this project, he was responsible for the collection of confirmation surface soil and water samples to verify site conditions for the removal of contaminated soils and surface water. Large volumes of soil had to be removed due to the release of over 20,000 gallons of glycol-based product from five derailed tanker cars.

Mr. Brown provided continuous air monitoring and collected confirmation soil samples for a mercury remediation project outside Farmington, New Mexico. This work involved the inspection of more than 1,000 mercury meter stations located on the gas fields of the Jicharia Apache Indian Reservation in northwest New Mexico. He also provided oversight on the removal of thousands of cubic yards of mercury contaminated soil for proper disposal according to Federal, state, and local regulations.

Mr. Brown provided technical and analytical support on two projects for the EPA Environmental Monitoring Systems Laboratory under the SITE program. These projects involved the

assessment and evaluation of innovative technologies for polychlorinated biphenyls (PCB) and pentachlorophenol (PCP) analyses. On the first project involving the demonstration of PCB technologies, Mr. Brown wrote the health and safety plan and was the on-site field safety officer. The analytical methods used by the technologies were based on optical densities of immunoassay and electrochemical detection of chlorides. Mr. Brown performed field analyses on approximately 400 samples and wrote reports evaluating the performance of each technology. On the second project, Mr. Brown profiled seven different waste streams for proper disposal.

Mr. Brown was instrumental in the design of an activated carbon system that removed dioxins from water associated with PCP contamination at a former wood treating site, which drastically reduced the amount of money needed for waste removal.

Mr. Brown participated in ecological sampling activities at Point Mugu, California, which included the live trapping of small and medium-sized mammals, tracking the movement of large mammals, fish sampling during both day and night high-tide events, and conducting 24-hour tidal and current measurements.

Mr. Brown managed a federal disaster assistance project under the REPA contract. This project included conducting flood inspections and collecting global positioning system (GPS) data at over 2,500 facilities located in multiple counties throughout Iowa. To complete flood inspections and collect GPS data at more than 2,500 facilities in multiple counties throughout Iowa, Mr. Brown managed a multidisciplinary team of over 30 people from five different office locations with a budget of $522,000. This work was conducted for EPA Region 7 in response to the Midwest flood of 1993. At each of the facilities, inspectors: (1) interviewed facility personnel; (2) conducted a multimedia inspection; (3) discussed releases that occurred during the flooding; (4) discussed waste management problems that occurred because of the flooding; (5) documented the releases and waste management problems; (6) distributed EPA literature; (7) collected 1993 hazardous waste manifests from the facilities; (8) photographed each site, as well as any observed spills, releases, or other observable RCRA violations; and (9) located the facility using a GPS system. Mr. Brown closely tracked expenditures and reported activity to EPA almost daily through a telephone briefing. He oversaw the development of a database to document each inspection and the materials submitted to EPA.

Mr. Brown conducted site investigations at a facility in Missouri under an enforcement order by the Missouri Department of Natural Resources. The primary objective of the site investigation

activities was to delineate horizontal and vertical extent of volatile organic compound (VOC) contamination in groundwater and to characterize the site hydrogeology. Mr. Brown was the primary operator for collecting groundwater samples with a hydraulic sampling device. Mr. Brown collected groundwater samples and conducted slug tests on monitoring wells to determine hydraulic conductivity of the bedrock and overlying materials.

REFERENCES

The following are references that will attest to the capabilities of SES and Bay West, and of our key project staff.

SES Corporate References

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SES Project Team References

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Bay West

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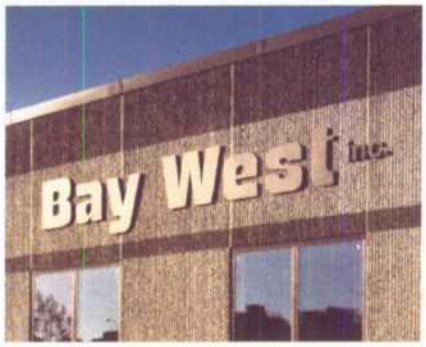
About Bay West. . .

Bay West Capabilities and Experience



General Information & History

Bay West, a Small Business Enterprise under SIC 8744/NAICS 56291, is the leading environmental remediation and engineering company in the Midwest. Founded in 1974, Bay West entered the environmental marketplace as an emergency response contractor, responding to emergency calls regarding hazardous materials spills, abandoned barrels, unknown vapors, and suspicious-looking materials in various locations. Over the years, Bay West gained a reputation as one of the few companies with the capability to rapidly mobilize and implement cost-effective solutions for its customers.

Now celebrating its 26th year of service, Bay West provides industrial, environmental, management, and emergency services. With offices in St. Paul, MN (headquarters), Kansas City, KS, Hastings, NE, Kalamazoo, MI, Kellogg, ID, Baraboo, WI, Seattle, WA, and St. Louis, MO, Bay West can rapidly mobilize and execute projects throughout the country.

Bay West's expertise is the in-field implementation of remedial and response action activities. This expertise has been successfully demonstrated on more than 10,000 projects completed in 37 states. Based on actual field experience, Bay West has the proven technical and management capabilities to implement all the types of remedial actions, including containment, monitoring, reduction, removal, transport, and treatment of hazardous materials/waste, including UXO removal. Bay West also performs incidental construction, operations & maintenance, sampling/testing/monitoring, and other environmental support services anticipated on this contract. Our experience includes the application of proven innovative remedial technologies such as bioremediation, various forms (enhanced) of soil vapor extraction techniques, duel-phase extraction wells, composting, thermal treatment, and in-situ and ex-situ stabilization for a variety of contaminants. Bay West has performed the decontamination and demolition of numerous sites across the conterminous United States.

Office Locations

Headquarters: 5 Empire Drive, St. Paul, MN 55103
Regional Office: 10620 Widmer Rd., Lenexa, KS 66215

Current Project Offices:

- Seattle, WA (Eagle Harbor/Wyckoff Superfund site on Bainbridge Island)
- Kalamazoo, MI (Long-term Commercial Facility Remediation System O&M Project)
- Hastings, NE (FarMarCo/Blaine Naval Ammunition Depot Superfund Site)
- Baraboo, WI (Badger Army Ammunition Plant Superfund Site)
- St. Louis, MO (St. Louis Airport Site [SLAPS] FUSRAP Site)
- Kellogg, ID (Bunker Hill Superfund Site)

PHILIP DULA, CPG, CHMM
Remediation Manager

Education/Dates:
- MBA/1999
- MS Geology/1982
- BA Biology/1977

Special Qualifications/Training/Registrations:
- Certified Professional Geologist (CPG), MO, AR
- Certified Hazardous Materials Manager (CHMM)
- 40-Hour OSHA Training
- 8-Hour OSHA Supervisor Training

Years Experience: 18
Location: Kansas City, KS

Mr. Dula has 18 years experience in environmental investigation and remediation. His technical expertise is in the initial evaluation of site environmental problems and the development and implementation of cost-effective methods of remediation. Through his experience, he has overseen the completion and/or implementation of more than $20M of environmental services under both cost reimbursable and firm fixed price contracts. He has managed programs and projects for the USACE and US EPA Regions VI and VII, including an ARCS contract. He has completed environmental projects in 12 states throughout the Midwest, Southeast, and Northeast. He is knowledgeable in Federal, State, and/or local laws, regulations, and guidance documents, including US EPA, DOT, OSHA regulations. This experience makes him a valuable additional to this contract team.

PROJECT EXPERIENCE:

- *Tank Demolition, Former Olathe Naval Air Station, USACE Kansas City District, Gardner, KS.* Mr. Dula managed the demolition of two 250,000-gallon, reinforced concrete, aircraft fuel underground storage tanks from this site.
- *UST Removal Contract, USACE - Kansas City District, KS, MO, NE, IA.* Mr. Dula managed UST removals and closures at several sites throughout the 4-state area. The largest project, which took place at Forbes Field, Topeka, KS, involved removing 54 fuel oil tanks. Other sites included minuteman missile sites. Work also included building demolition and abatement of asbestos associated with older boilers.
  - *Environmental SPIDT Contract, USACE - Kansas City District, Various Sites, NE, IA, MO, KS.* Mr. Dula serves as project manager for various task orders (TOs) under this multi-TO contract. Bay West was awarded this contract in 1995, and has performed 18 TOs to date, including excavation and debris disposal; stream bank stabilization; AST upgrades; soil vapor surveys; UST removals, and PCB transformer removal.
- *ARCS Contract Site Assessment, US EPA Region VII.* As project manager, Mr. Dula directed completion of 60 preliminary assessments, 28 RCRA facility assessments, 42 site investigations, 45 site inspection prioritization's, and 5 fully documented HRS packages. He directed a pilot study to implement SACM principles on 4 inactive lead-mining sites.
- Tinker AFB, Oklahoma City, OK, Tank Removals. As Program Manager Mr. Dula directed the removal of 4 chemical tanks each with a capacity of 80 cubic yards. These tanks contained alum, lime, and urea that were formerly used in the facility's industrial wastewater treatment plant (IWWTP). Bay West emptied and decontaminated the tanks and then dismantled the tanks for disposal to a steel recycler. The tanks were located on the second floor of the IWWTP building and therefore their removal required Bay West to perform structural improvements to ensure the building's structural integrity was maintained. Bay West also removed 400 linear feet of associated piping, and coordinated disposal of the tanks, piping, chemicals, and rinsate waters. Bay West received a contract modification/change order to remove an additional 60 cubic yard AST containing soda ash at the IWWTP. Bay West utilized a crane to lift and lower the tank after emptying and decontaminating the AST.

KEITH ELLIS
Field Manager

Education/Dates:

Special Qualifications/Training/Registrations:
- 40-Hour OSHA Training
- 40-Hour Hazardous Waste Facility Operation Course
- 8-Hour OSHA Supervisor Training
- 8-Hour OSHA Train-the-Trainer for hazardous waste site training
- 24-Hour Radiological Worker Level II 1993, 2000
- Asbestos Inspector Training (AHERA Regulations, TSCA Title II and the State of Missouri)
- Confined Space Entry 29 CFR 1910.146 1995

Years Experience: 22
Location: Kansas City, KS

Mr. Ellis has 22 years of environmental investigation experience serving as site supervisor, field technician, and equipment operator. He is trained to operate heavy equipment including backhoe, trackhoe, loaders, and dozers. He has participated in sampling programs for water and sludge from surface impoundments, subsurface soils, surface water and ground water. His background includes working as industrial hygiene technician at Tinker Air Force Base, Oklahoma, serving as a health and safety/remediation technician for Foster Wheeler Environmental Services, and working as both a commercial driver and aviation structural mechanic. In addition Mr. Ellis was a H&S Specialist at the SLAPS site in St. Louis, MO and provided management of the excavation of soils contaminated by low levels of radioactive compounds.

PROJECT EXPERIENCE:

- *Site Remediation, USACE Kansas City District, Rolla University, MO.* Mr. Ellis served as environmental technician during the excavation of approximately 500 cubic yards of lead-contaminated soil at a former foundry/research site. He performed sampling and equipment operation. This project was performed for the U.S. Army Corps of Engineers, Kansas City District, under Bay West's Small Project Indefinite Delivery Type (SPIDT) contract.
- *Health & Safety/Engineering Oversight, St. Louis Airport (SLAP) FUSRAP Site, MO* - Mr. Ellis was Bay West's site safety & health officer at the SLAP project site. Work involved the cleanup of a FUSRAP/Superfund site. Mr. Ellis performed hazard evaluation and monitoring, tailgate safety meetings and coordination with the safety & health manager. This project is under Bay West's TERC with Stone & Webster and the Omaha District.
- *Richards Gebaur AFB, Belton, MO. AST Removals.* Mr. Ellis performed the removal of 4, 250,000 gallon ASTs containing JP4 jet fuel and 1, 250,000 gallon fuel oil AST at Richards Gebaur AFB. The project involved the removal of any remaining product and tank bottoms the decontamination of the AST interiors under confined space protocols, and the dismantling and disposal of the tanks. In addition Mr. Ellis managed the transportation and disposal of the residual product and tank bottoms. All waste were fully characterized before disposal.
- *Health & Safety Oversight/Equipment Operation, Various Sites.* Mr. Ellis performed health and safety services for various companies, utilizing his health and safety expertise. He was responsible for monitoring, sampling, and documentation of soils, water, and excavated materials. Mr. Ellis monitored the excavation of soils using backhoes, trackhoes, and D6 track loader for health and safety compliance. He was responsible for collection of ground water data for RCRA quarterly sampling events; surface and subsurface soil investigations; geological logging of ground water monitoring well installation; slug testing, and documentation of these activities. Mr. Ellis also conducted monitoring for the presence of toxic substances using photoionizer detector and LEL/Oxygen monitor.
- *Site Remediation, US Naval Air Station, Bermuda.* Mr. Ellis was responsible for identification and packaging of unknown hazardous waste. Drums and the surrounding area were monitored utilizing the photoionizer detector, LEL/Oxygen meter and rad meter.