GSA Catalog of Services

Contract No. GS-10F-0328R

Contract Period: May 23, 2005- May 22, 2020

Prepared for:

U.S. Government Services Administration

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Prepared by:

MEC^X, Inc.

8864 Interchange Drive
Houston, Texas 77054
Voice: 713-585-7000
Fax: 713-585-7049
www.mecx.net

Point Of Contact: Isaac Aboulafia

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A. Customer Information

1a. Table of awarded special item number(s) with appropriate cross reference to item descriptions and awarded price(s).

SIN: 899-1 and 899-1RC - Environmental Consulting Services
SIN: 899-8 and 899-8RC - Remediation and Reclamation

1b. Identification of the lowest priced model number and lowest unit price for that model for each special item number (SIN) awarded in the contract. This price is the Government price based on a unit of one, exclusive of quantity/dollar volume, prompt payment, or any other concession affecting price. Contracts which have unit prices based on the geographic location of the customer should show the range of the lowest price, and cite the areas to which the prices apply.

Equipment Rate Schedule

Item	Units	Unit Cost
PID/FID	day	$100.00
Misc. Expendable Supplies	day	$50.00
Ice	each	$2.00
Hydrating Fluids	day	$10.00
Disposable Gloves	each	$20.00
Paper Towels	each	$2.00
Drum	each	$60.00
Digital Camera	day	$20.00
Draeger Kit	day	$55.00
LEL Meter	day	$15.00
Caution Tape/Roll	each	$30.00
Non-Phosphate Soap	each	$15.00
Duct Tape Roll	each	$8.00
Field Log Book	each	$10.00
First Aid Kit	each	$30.00
Flags (set of 100)	each	$15.00
Garbage Bags/Box	each	$12.00
Personal Protective Equip./Person	day	$30.00
Walkie Talkie Set	day	$20.00
100' Poly Rope	each	$5.00
Work Gloves	each	$15.00
Decontamination Station	each	$10.00
Safety Signs	each	$50.00
Rain Suit	each	$25.00
Tarp (10' x 10')	each	$20.00
Level Indicator	day	$35.00

Item	Units	Unit Cost
Disposable Bailer	each	$10.00
Well Pump	each	$1,120.05
pH Meter	day	$20.00
Salinty/Temp/Cond. Meter	day	$50.00
Mini-RAM	day	$75.00
Hammer drill	day	$100.00
Soil Color Chart	day	$3.00
A.C. Refill	each	$320.00
High Volume Air Pump	day	$10.00
Low Volume Air Pump	day	$12.50
Air Sampling Kit	day	$20.00
Microscope Kit	day	$100.00
Asbestos Bulk Sample Kit	day	$40.00
IAQ Meter	day	$175.00
Moisture Meter	day	$50.00
SVE Blowers	month	$2,000.00
Magnahelic Gauges	day	$10.00
Anemometer	day	$10.00
CO_2 Meter	day	$40.00
DO Meter	day	$20.00
Gas Fueled Generator	day	$55.00
YSI Combination Meter	day	$100.00
10' Section of PVC Lance	each	$5.00
Drum Pump and Hoses	day	$20.00
Air Compressors	day	$25.00
Elec. Drum Mixer & Drum	day	$20.00
Drum Dolly/Hand Truck	day	$15.00
ISCO Tools	project	$100.00
Clothes/per person/project	each	$50.00
ISCO Trailer	day	$80.00
Equipment Box for Shipping/Storage	each	$32.75
Water Hose	each	$40.00
Electric Extension Cord	each	$15.00
Misc. Bulk Delivery Equipment	week	$251.00
Thermocouple/Connectors	each	$50.00
EZ-Up Shelter	day	$25.00
Peroxide Hydrometer	day	$4.00
Sand	each	$3.00
Reflux Containment	each	$10.00
1" Reinforced Hose	each	$2.50

Item	Units	Unit Cost
Fire Hose Rental	day	$10.00
Fire-Hose Adapters	each	$150.00
Power Inverter (750 W)	day	$10.00
Riser & quick connect (sacrificed)	each	$75.00

1c. If the Contractor is proposing hourly rates, a description of all corresponding commercial job titles, experience, functional responsibility and education for those types of employees or subcontractors who will perform services shall be provided. If hourly rates are not applicable, indicate "Not applicable" for this item.

Labor Categories and Descriptions

Category	Descriptions
Principal	MEC^X's principals each have over 20 years experience in engineering, environmental remediation and/or environmental consulting. MEC^X principals are registered professional engineers and/or experienced professionals are committed to ensuring quality professional work.
Project Manager	The project managers at MEC^X are efficient at facilitating the delivery of on-time, cost-effective solutions, which meet or exceed client's needs and expectations. MEC^X project managers have 5-20 years of management experience.
Engineer	MEC^X has a staff of multi-disciplined engineers to cover a broad array of project assignments including compliance, evaluation, auditing, , permitting, assessment, design, bench-scale testing of remediation technologies, remedial implementation and construction. MEC^X has 2 registered professional engineers, who hold licenses in over 30 states.
Scientist	MEC^X has a broad array of scientists; chemists, geologists, database managers and environmental scientists, with specific expertise in remediation, Phase I and Phase II site assessment, regulatory compliance, auditing, permitting, quality assurance and data validation who execute project specifications.
Technician	Technicians are available to collect a variety of samples including asbestos, mold/indoor air quality samples and construction management.
Sr. Administrative Assistant	MEC^X administrative staff support project managers, engineers, and scientists in producing documents, invoicing and organizing files so the technical staff can focus on the technical aspect of the projects.

Labor Rate Schedule

Category	GSA Hourly Rate
Principal	$141.75
Project Manager V	$136.50
Project Manager IV	$131.25
Project Manager III	$126.00
Project Manager II	$120.75
Project Manager I	$110.25
Engineer V	$99.75
Scientist V	$99.75
Engineer IV	$89.25
Scientist IV	$89.25
Engineer III	$78.75
Scientist III	$78.75
Engineer II	$68.25
Scientist II	$68.25
Engineer I	$57.75
Scientist I	$57.75
Technician II	$47.25
Sr. Administrative Assistant	$47.25

2. Maximum order.

SIN 899 1: $1,000,000.00
SIN 899 8: $1,000,000.00

3. Minimum order.

SIN 899 1: $100.00
SIN 899 8: $100.00

4. Geographic coverage (delivery area).

Domestic only (48 contiguous States and the District of Columbia)

5. Point(s) of production (city, county, and State or foreign country).

8864 Interchange Drive
Houston, Harris County, TX 77054

6. Discount from list prices or statement of net price.

Task Order Amount	Discounts
$100K - $200K	1%
>$200K - $300K	2%
>$300K - $400K	3%
>$400K - $500K	4%
>$500K	5%

7. Quantity discounts.
See line item 6, above.

8. Prompt payment terms.
Additional 1% for prompt payment of within 10 days of invoice date

9a. Notification that Government purchase cards are accepted at or below the micro-purchase threshold.
Government purchase cards are accepted at, below and above the micro-purchase threshold.

9b. Notification whether Government purchase cards are accepted or not accepted above the micro-purchase threshold.
Government purchase cards are accepted at, below and above the micro-purchase threshold.

10. Foreign items (list items by country of origin).
Not applicable.

11a. Time of delivery.
To be determined at task order level or negotiated with end user.

11b.Expedited Delivery. The Contractor will insert the sentence "Items available for expedited delivery are noted in this price list." under this heading. The Contractor may use a symbol of its choosing to highlight items in its price lists that have expedited delivery.
To be determined at task order level or negotiated with end user.

11c.Overnight and 2 day delivery. The Contractor will indicate whether overnight and 2 day delivery are available. Also, the Contractor will indicate that the schedule customer may contact the Contractor for rates for overnight and 2 day delivery.
To be determined at task order level or negotiated with end user.

11d. Urgent Requirements. The Contractor will note in its price list the "Urgent Requirements" clause of its contract and advise agencies that they can also contact the Contractor's representative to effect a faster delivery.
To be determined at task order level or negotiated with end user.

12. F.O.B. point(s).
FOB Destination

13a. Ordering address(es).
8864 Interchange Drive
Houston, Harris County, TX 77054

13b. Ordering procedures.

For more information on ordering from the Federal Supply schedule, click on the "Ordering Through the GSA Schedule" button on the gsa.federalschedule.com website under the GSA Service Schedules section.

14. Payment address(es).

8864 Interchange Drive
Houston, Harris County, TX 77054

15. Warranty provision.

Not applicable.

16. Export packing charges, if applicable:

Not applicable.

17. Terms and conditions of Government purchase card acceptance (any thresholds above the micro-purchase level).

Government purchase cards are accepted at, below and above the micro-purchase threshold.

18. Terms and conditions of rental, maintenance, and repair (if applicable).

Not applicable.

19. Terms and conditions of installation (if applicable).

Not applicable.

20. Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices (if applicable).

Not applicable.

20a. Terms and conditions for any other services (if applicable).

Not applicable.

21. List of service and distribution points (if applicable).

Not applicable.

22. List of participating dealers (if applicable).

Not applicable.

23. Preventive maintenance (if applicable).

Not applicable.

24a. Special attributes such as environmental attributes (e.g., recycled content, energy efficiency, and/or reduced pollutants).

Not applicable.

24b.If applicable, indicate that Section 508 compliance information is available on Electronic and Information Technology (EIT) supplies and services and show where full details can be found (e.g. contractor's website or other location.) The EIT standards can be found at: www.Section508.gov/.

Not applicable.

25. Data Universal Number System (DUNS) number.

102873283

26. Notification regarding registration in Central Contractor Registration (CCR) database:

MEC^X, Inc. is registered in the System for Award Management (SAM; which replaced the Central Contractor Registration-CCR database in the fall of 2012). The MEC^X registration is valid until September 26, 2015 and is renewed as required.

B. Services Contract Act (SCA) Applicability

MEC^X acknowledges that the Service Contract Act (SCA) is applicable to this contract as it applies to the Environmental Services Schedule and services provided. Due to exemptions for professional employees (FAR 22.1101, 22.1102 and 29 CRF 541.300), specific labor categories have not been identified as being subject to SCA; however, this contract still maintains the provisions and protections for SCA eligible labor categories. If and/or when the contractor adds SCA labor categories/employees to the contract through the modification process, MEC^X will inform the Contracting Officer and establish a SCA matrix identifying the GSA labor category titles, the occupational code, SCA labor category titles and the applicable WD number. Failure to do so may result in cancellation of the contract.

C. Company Information

MEC^X, Inc., is a **service-disabled veteran owned small business (SDVOSB)** and technology-based team of environmental solution providers. We offer consulting, auditing, engineering, remediation and scientific services to industrial, commercial and governmental organizations. MEC^X has successfully and consistently shown its commitment to excellence, responsiveness, safety and delivery of technically sound environmental solutions driven by client needs. Thus, MEC^X personnel take an active interest in understanding our client's business needs and objectives.

D. Contract Information

GSA Contract Number: GS-10F-0328R
Schedule #: 899 Environmental Advisory Services

1. Consulting (SIN #: 899 1/899 1RC Environmental Consulting)

Groundwater Monitoring

MEC^X has exceptional expertise and qualifications in the areas of auditing, storm water management/planning, site investigation, engineering, chemistry data validation, environmental engineering,

data management, quality assurance, construction management and project management including cost and scheduling controls.

Environmental Audits

MEC^X provides teams of professional environmental compliance auditors to provide 3rd party auditing of facilities. The audits assess the following program and operational areas: air programs; water programs; pesticide programs; solid and medical waste; hazardous substances/materials and chemicals; hazardous waste; environmental response; emergency planning and community right-to-know programs; cultural resource management; natural resource management; storage tank programs; petroleum, oil and lubricant (POL) management; and toxic substances.

MEC^X followed the audit methodology guidance found in ISO 19011, Guidelines for Quality and Environmental Management Systems Auditing. Additionally, MEC^X performs audits on practice and protocols specified in the U.S. TEAM Guide and its State Supplements as produced by the Engineering Research and Development Center (ERDC), Construction Engineering Research Laboratory (CERL) of the Army Corp of Engineers.

Chemistry Consulting

MEC^X 's environmental chemistry consulting staff supports environmental site investigations, remedial programs, audits, risk assessments and environmental litigation cases. We have direct experience with sample collection, environmental laboratory analyses, project management, data validation and data interpretation and defense. MEC^X environmental chemists support a wide range of clients in the following areas: Project Planning and Development, Project Execution, Chemistry and Data Quality Related Services, and Laboratory Program Management.

Compliance Assistance

MEC^X performs spill prevention control and countermeasure (SPCC) compliance inspections and prepares SPCC plans and storm water pollution prevention plans (SWPPP). Under the responsible care of a MEC^X Professional Engineer(s) registered in 30 States, comprehensive SPCC and SWPPP plans are prepared in accordance with the current 40 CFR 112 guidelines and state requirements. These plans include industry-accepted best-management practices for oil storage facilities and required recordkeeping sections. MEC^X personnel use AutoCAD to create detailed site plans which include regulatory-required plan features.

2. Remediation (SIN #: 899 8/899 8RC Remediation and Reclamation Services)

MEC^X understands that thorough and careful planning and execution is critical to obtaining regulatory closure of contaminated sites. MEC^X personnel have extensive experience conducting remedial investigations, performing feasibility studies, performing treatability studies/pilot tests, remedial design and construction management projects, operating and monitoring the progress of remedial systems, negotiating site cleanup objectives and obtaining closure from regulatory agencies.

In-Situ Chemical Oxidation

MEC^X specializes in the design and application of a multitude of remediation technologies for the remediation of saturated soil and groundwater. We bundle appropriate technologies to cost-effectively and rapidly remediate affected subsurface regions. MEC^X tailors remedial programs around client's technical and business considerations, while ensuring that disruptions (if any) to mission critical operations are minimized and essential operations are continued.

MEC^X has unique proven expertise in designing, installing and operating innovative remedial approaches to treat soil, sludge, groundwater and wastewater. MEC^X's specialties are in innovative oxidation designs including In-situ chemical oxidation (ISCO), engineered excavations and enhance soil vapor extraction systems.

E. Representative Projects

1. Multi-Media Environmental Compliance Audits

Under SIN 899 1 (Environmental Consulting), MEC^X performed 10 environmental compliance audits at Veteran Affairs (VA) medical facilities across the southern and mid-western U.S. MEC^X provided teams of professional environmental compliance auditors to provide 3rd party auditing of VA medical facilities as part of the VA's GEMS (Green Environmental Management System) program. MEC^X provided these services for VA medical centers in Kansas, Missouri, and Illinois (VISN 15). The medical facilities were large facilities with multiple buildings and complex operations. The size of the facilities ranged from 500,000 square feet to over 1.5 million square feet.

The audits included a review and inspection of practices associated with the facility's air programs, water and wastewater programs, pesticide programs, solid waste, Resource Conservation and Recovery Act (RCRA) hazardous waste, hazardous substances and chemicals, spill response program, emergency and contingency planning, hazard communication, Tier 1/Tier 2 chemical inventory reporting, hazardous materials transportation, asbestos management plans, polychlorinated biphenyl (PCB) management plans, lead paint management, universal waste management, radiological waste, bio-hazardous waste, solid waste management, underground storage tanks (USTs), aboveground storage tanks (ASTs) waste disposal plan, storm water, emergency planning, cultural resource management, lubricant management, air emissions and Pollution Prevention Plan.

The audits included the assessment of the facilities with regards to federal environmental regulations as well as the state environmental regulations governing each facility. Due to the large number of states covered, MEC^X developed a program management system to systematically obtain regulatory requirements for each of the states and then made staff assignments to maximize consistency in performing audits within given states. MEC^X's systematic approach also ensured that the project was completed with technical accuracy and efficiency and within the strict time frame imposed by the impending compliance deadline set by the EPA.

Audit findings, root causes and recommendations for the facilities were documented using CP Track (Compliance and Processes Tracking). Compliance audits followed the audit methodology guidance found in ISO 19011, Guidelines for Quality and Environmental Management Systems Auditing. Additionally, audits were based on the U.S. TEAM Guide and its State Supplements as produced by the Engineering Research and Development Center (ERDC), Construction Engineering Research Laboratory (CERL) of the Army Corp of Engineers.

Throughout the audits, MEC^X contacted local and state environmental regulators to provide interpretation of situations specific to each of the sites. The regulatory agencies were contacted anonymously to protect the interest of the client and the audit findings included recommendations based upon the regulatory interpretation.

2. SPCC Plan Preparation

Under SIN 899 1 (Environmental Consulting) and under the responsible care of MEC^X Professional Engineers, MEC^X performed SPCC compliance inspections and prepared comprehensive SPCC plans for 4 VA facilities (Amarillo, Texas; Tucson, Arizona; Prescott, Arizona; and Albuquerque, New Mexico). The properties have multiple petroleum storage areas that were evaluated for spill scenarios, secondary containment analysis, storage vessel integrity and spill prevention management practices. MEC^X personnel used AutoCAD to create detailed site plans, which included regulatory-required plan features.

Specific tasks related to storm water assessment included:

- Reviewed existing SPCC regulations (40 CFR Part 112) to ensure regulatory compliance with the facilities' SPCC programs.
- Comprehensive assessment and photo documentation of storm water flow;
- Performed site inspections with facility GEMS coordinators.
- Reviewed existing SPCC for regulatory compliance;
- Identified potential contributors (petroleum, solvents, metals) to storm water contamination;
- Prepared site plans showing storm water feature/flow patterns and potential contaminant sources;
- Developed and implemented corrective action measures to mitigate effects to storm water quality.
- Issued SPCC Plans sealed by P.E.
- Services were performed with high quality, on time and within budget.

3. Multi-Media Environmental Compliance Audits

Under SIN 899 1 (Environmental Consulting), MEC^X performed 23 environmental compliance audits at VA medical facilities across the southern and mid-western U.S. MEC^X provided teams of professional environmental compliance auditors to provide 3rd party auditing of VA medical facilities as part of the VA's GEMS (Green Environmental Management System) program. MEC^X provided these services for facilities in Texas, Oklahoma, Florida, Mississippi, Louisiana, and Arkansas (VISN 16). The medical facilities that were audited were large facilities with multiple buildings and complex operations. The size of the facilities ranged from 500,000 square feet to over 1.5 million square feet.

The audits included a review and inspection of practices associated with the facility's air programs, water and wastewater programs, pesticide programs, solid waste, Resource Conservation and Recovery Act (RCRA) hazardous waste, hazardous substances and chemicals, spill response program, emergency and contingency planning, hazard communication, Tier 1/Tier 2 chemical inventory reporting, hazardous materials transportation, asbestos management plans, polychlorinated biphenyl (PCB) management plans, lead paint management, universal waste management, radiological waste, bio-hazardous waste, solid waste management, underground storage tanks (USTs), aboveground storage tanks (ASTs) waste disposal plan, storm water, emergency planning, cultural resource management, lubricant management, air emissions and Pollution Prevention Plan.

The audits included the assessment of the facilities with regards to federal environmental regulations as well as the state environmental regulations governing each facility. Due to the large number of states covered, MEC^X developed a program management system to systematically obtain regulatory requirements for each of the states and then made staff assignments to maximize consistency in performing audits within given states. MEC^X's systematic approach also ensured that the project was completed with technical accuracy and efficiency and within the strict time frame imposed by the impending compliance deadline set by the EPA.

Audit findings, root causes and recommendations for the facilities were documented using CP Track (Compliance and Processes Tracking). Compliance audits followed the audit methodology guidance found in ISO 19011, Guidelines for Quality and Environmental Management Systems Auditing. Additionally, audits were based on the U.S. TEAM Guide and its State Supplements as produced by the Engineering Research and Development Center (ERDC), Construction Engineering Research Laboratory (CERL) of the Army Corp of Engineers.

Throughout the audits, MEC^X contacted local and state environmental regulators to provide interpretation of situations specific to each of the sites. The regulatory agencies were contacted anonymously to protect the interest of the client and the audit findings included recommendations based upon the regulatory interpretation.

4. Environmental Compliance Audit

Under SIN 899 1 (Environmental Consulting), MEC^X performed environmental compliance audits at Veteran Affairs (VA) Michael E DeBakey VA Medical Center and two satellite clinics in the Houston area. MEC^X provided a team of professional environmental compliance auditors to provide 3rd party auditing of VA medical facilities as part of the VA's GEMS (Green Environmental Management System) program. The medical facility that was audited was a large facility with multiple buildings and complex operations.

The audits included a review and inspection of practices associated with the facility's air programs, water and wastewater programs, pesticide programs, solid waste, Resource Conservation and Recovery Act (RCRA) hazardous waste, hazardous substances and chemicals, spill response program, emergency and contingency planning, hazard communication, Tier 1/Tier 2 chemical inventory reporting, hazardous materials transportation, asbestos management plans, polychlorinated biphenyl (PCB) management plans, lead paint management, universal waste management, radiological waste, bio-hazardous waste, solid waste management, underground storage tanks (USTs), aboveground storage tanks (ASTs) waste disposal plan, storm water, emergency planning, cultural resource management, lubricant management, air emissions and Pollution Prevention Plan.

The audits included the assessment of the facilities with regards to federal environmental regulations as well as the state environmental regulations governing each facility. Due to the large number of states covered, MEC^X developed a program management system to systematically obtain regulatory requirements for each of the states and then made staff assignments to maximize consistency in performing audits within given states. MEC^X's systematic approach also ensured that the project was completed with technical accuracy and efficiency and within the strict time frame imposed by the impending compliance deadline set by the EPA.

Audit findings, root causes and recommendations for the facilities were documented using CP Track (Compliance and Processes Tracking). Compliance audits followed the audit methodology guidance found in ISO 19011, Guidelines for Quality and Environmental Management Systems Auditing. Additionally, audits were based on the

U.S. TEAM Guide and its State Supplements as produced by the Engineering Research and Development Center (ERDC), Construction Engineering Research Laboratory (CERL) of the Army Corp of Engineers.

Throughout the audits, MEC^X contacted local and state environmental regulators to provide interpretation of situations specific to each of the sites. The regulatory agencies were contacted anonymously to protect the interest of the client and the audit findings included recommendations based upon the regulatory interpretation.

5. Data Validation and Data Management

Under SIN 899 1 (Environmental Consulting), MEC^X provided data validation and data usability assessment services in support of 42 U.S. Army Corp of Engineers (USACE), Louisville District projects including: Camp Ellis Military Range (CEMR), Former Nike C-72 Site (Nike C-72), Former Nike SL-10 Site (Nike SL-10), Ravenna Army Ammunition Plant (RVAAP), Former Nike Site CD-78 Base Year (Nike CD-78 Base Year), Former Nike Site CD-78 Year One (Nike CD-78 Y1) and Former Nike Site C-44 (Nike C-44). CEMR, a former military training range that provided basic training and advanced training for engineers, medical, signal and quartermaster corps during World War II, originally had 19 former training ranges identified as potential areas of concern. A Limited Site Investigation, performed in 2007 and 2008, collected more than 1,000 samples analyzed for explosives, metals, polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), polynuclear aromatic compounds (PAHs), volatile organic compounds (VOCs) and perchlorate.

MEC^X performed definitive data validation (Level IV) on 10% of the primary and field duplicate samples and the majority of the laboratory split samples and then assessed the usability of the data. RVAAP was established in 1940 to load, store, and demilitarize conventional artillery ammunition, bombs, mines, fuses and boosters, primers and percussion elements. RVAAP was only occasionally operable between the end of the Korean War and the mid-1970s. Numerous Phase I and several Phase II assessments have already been performed at the site's load lines. MEC^X provided data validation and data usability services for a sampling effort concentrated along three load lines. Approximately 120 samples were analyzed for explosives, metals, PCBs, pesticides, SVOCs, VOCs and hexavalent chromium. MEC^X performed definitive data validation on 10% of the primary and field duplicate samples and the majority of the laboratory split samples and performed an electronic data review on the remaining data. For Nike SL-10 (10 samples analyzed for methane, ethane and ethene, inorganic anions, sulfide and total organic carbon), MEC^X performed definitive data validation for one sample and the associated laboratory split sample and then assessed the usability of the data. For Nike C-72, 54 samples were collected and analyzed for metals and SVOCs. MEC^X performed definitive data validation on 10% of the primary and field duplicate samples and the majority of the laboratory split samples and performed an electronic data review on the remaining data. All deliverables contained a Data Validation and Chemical Data Quality Report(s) and, except for Nike SL-10, an electronic data deliverable (EDD).

6. Complex Remedial Construction

Under SIN 899 8 (Remediation and Reclamation Services), MEC^X performed an engineered removal of components at a National Aeronautics and Space Administration (NASA) thermal vacuum chamber at Johnson Space Center (JSC) in Houston, Texas. The project included the demolition of unused components of a seven story, 60-foot diameter thermal vacuum testing chamber in support of retrofitting/modernization efforts underway to convert the chamber to a testing facility for the James Webb Space Telescope (JWST), which is replacing the Hubble Space Telescope.

A drive shaft located beneath the simulated lunar plane floor in the chamber was a uniquely fabricated system that was designed to withstand the unusually rigorous environmental conditions simulated and induced by the vacuum. The drive shaft was designed and installed in the 1960s. Consequently, as-built drawings of the drive shaft were not available and it was impractical to contact the designers/fabricators of the shaft to ascertain precise construction details of the drive shaft. As a result of these unique conditions, many details required to plan and execute the precise removal of the drive shaft were not practically available.

Torch cutting in permuted confined space to accomplish the Dismantling and removal of drive shaft

MEC^X undertook removal of the drive shaft with limited information and was required to provide engineering evaluation of the structure as components were encountered. Throughout the project, MEC^X designed and implemented safe and effective solutions to remove the drive shaft components safely. Environmental and health considerations encountered during the removal included: lead-based painted surfaces, asbestos pipe insulation, heavy lifting/rigging, confined space and elevated working conditions. MEC^X developed detailed engineered lifting plans for safely lowering heavy pieces (weight up to 16,000 pounds each) removed during demolition. Objects that required lifting plans were safely and effectively lowered to ground level from as high as 7 stories where they were further dismantled. MEC^X also successfully made a variety of highly specialized cuts including several 3-inch thick stainless cuts that required the use of a specialized plasma cutter.

Through innovative, aggressive and safe demolition approaches, MEC^X successfully achieved rapid completion of the drive shaft removal without a safety incident in the more than 13,000 worker-hours expended on this project.

7. Sewer Rehabilitation

Under SIN 899 8 (Remediation and Reclamation Services), MEC^X designed and replaced a sewage system for the Department of Labor (DOL) at the Red Rock Job Corps Center in Lopez, Pennsylvania. As the first DOL SDVOSB design-build provider, the design and construction included over 5,000 LF of gravity mains, a lift station, manholes and a 4-inch force main to replace a current system that had excessive infiltration and inflow (I&I) and was inadequately sized for future facility development. The design included the development of a baseline survey and profiles as well as the development of all design documents and specifications. The project included replacement of existing pipelines and laterals, rerouting of lines to improve system operations and maintenance, and modifications to the wastewater treatment plant influent structures

Sewer replacement

MEC^X provided a number of creative engineering approaches that were implemented and which resulted in significant cost savings to the DOL. This included, but was not limited to, routing around a former buried railroad fuel tanker, upgrading lift station for easier maintenance, and routing the new HDPE force main within existing trench to avoid expensive and time-consuming rock excavation.

8. Environmental Remediation and Engineering Compliance

In accordance with requirements of **SIN 899 8 (Remediation and Reclamation) and 899 1 (Environmental Consulting),** MEC^X provided a variety of environmental assessment, compliance, engineering design and remediation services at a former pipe and conduit manufacturing facility in Texas. The project site was formerly operated as an industrial facility and contaminants from the historical industrial operations were hindering beneficial redevelopment plans for the site.

The services provided by MEC^X for this facility included:

- Phase I Environmental Site Assessment (ESA)
- Phase II site characterization for soil and groundwater contamination
- Asbestos survey, specification preparation and abatement oversight
- Lead-based paint survey
- Property condition assessment
- Wetlands delineation
- Regulatory reporting and negotiation
- Resident engineering during PCB abatement and storage tank removal
- Demolition and removal of a former waste water treatment plant
- Preparation of air permits
- National Pollution Discharge Elimination System permitting
- Stormwater Pollution Prevention Plan (SWPP) preparation
- Remediation design and implementation of sludge stabilization

The Phase I and II ESAs were performed in support of a real estate transaction. MEC^X revealed several potential environmental/business risk factors at the Site including: sand blasting areas; storage tanks; an on-site landfill; on-site waste water treatment plant; contaminated sludge (from the WWTP and cooling water retention ponds); and regulated building materials.

Sludge from the on-site WWTP was removed, characterized, classified and disposed off-site. MEC^X stabilized the 50,000 cubic yards of sludge in-situ. MEC^X also successfully abated asbestos and lead based paint containing materials from the on-site buildings throughout the facility. Additionally, MEC^X secured the facility during the Hurricane Ike storm to prevent further environmental affects.

Through innovative and aggressive assessment and remedial approaches, MEC^X successfully achieved rapid closure of environmental issues at the former pipe and conduit manufacturing facility, resulting in environmental regulatory closure and beneficial redevelopment of the property.