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April 27, 2021

By Electronic Mail

Ms. Zolymar Luna
Project Manager
Response and Remediation Branch
Caribbean Environmental Protection Division
U.S. Environmental Protection Agency, Region 2
City View Plaza II, Suite 7000, #48 Rd 165, km 1.2
Guaynabo, Puerto Rico 00968-8069

Ms. Andrea Leshak
Assistant Regional Counsel
New York Caribbean Superfund Branch
U.S. Environmental Protection Agency, Region 2
290 Broadway, 17th Floor
New York, New York 10007

Re: PROTECO Superfund Site – Notice of Additional Contractor and Change of Project Coordinator

Dear Ms. Luna:

I write on behalf of the Proteco Landfill Superfund Site Generator Parties Group (the "Proteco Group") pursuant to Paragraphs 22 and 23 of the October 6, 2020 Settlement Agreement and Administrative Order on Consent ("AOC") between the United States Environmental Protection Agency ("EPA") and the Proteco Group to provide notice that the Proteco Group has retained de maximis, inc. ("de maximis") to serve in a project coordinator role. Mr. Daniel N. Gainer of de maximis will replace Mr. Jaime Feliciano of Geosyntec Consultants of Puerto Rico, P.C. ("Geosyntec") as the Proteco Group's designated Project Coordinator, as defined under Paragraph 23 of the AOC. Geosyntec will continue in its role as the Proteco Group primary consultant and contractor, and Mr. Feliciano as Geosyntec's designated project manager for this case.

De maximis' and Mr. Gainer's professional qualifications are attached to this letter as Appendix A. De maximis' Quality Management Plan is attached to this letter as Appendix B. Mr. Gainer's contact information is provided below:

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Daniel N. Gainer, PG
450 Montbrook Lane
Knoxville, Tennessee 37919-2705
(865) 691-5052
dgainer@demaximis.com

Please let me know if you have any questions with respect to the foregoing.

Sincerely,

Adam M. Kushner
Partner
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Washington, DC 20004
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adam.kushner@hoganlovells.com

APPENDIX A

TABLE 1
de maximis' Multi-Party Site Project Experience

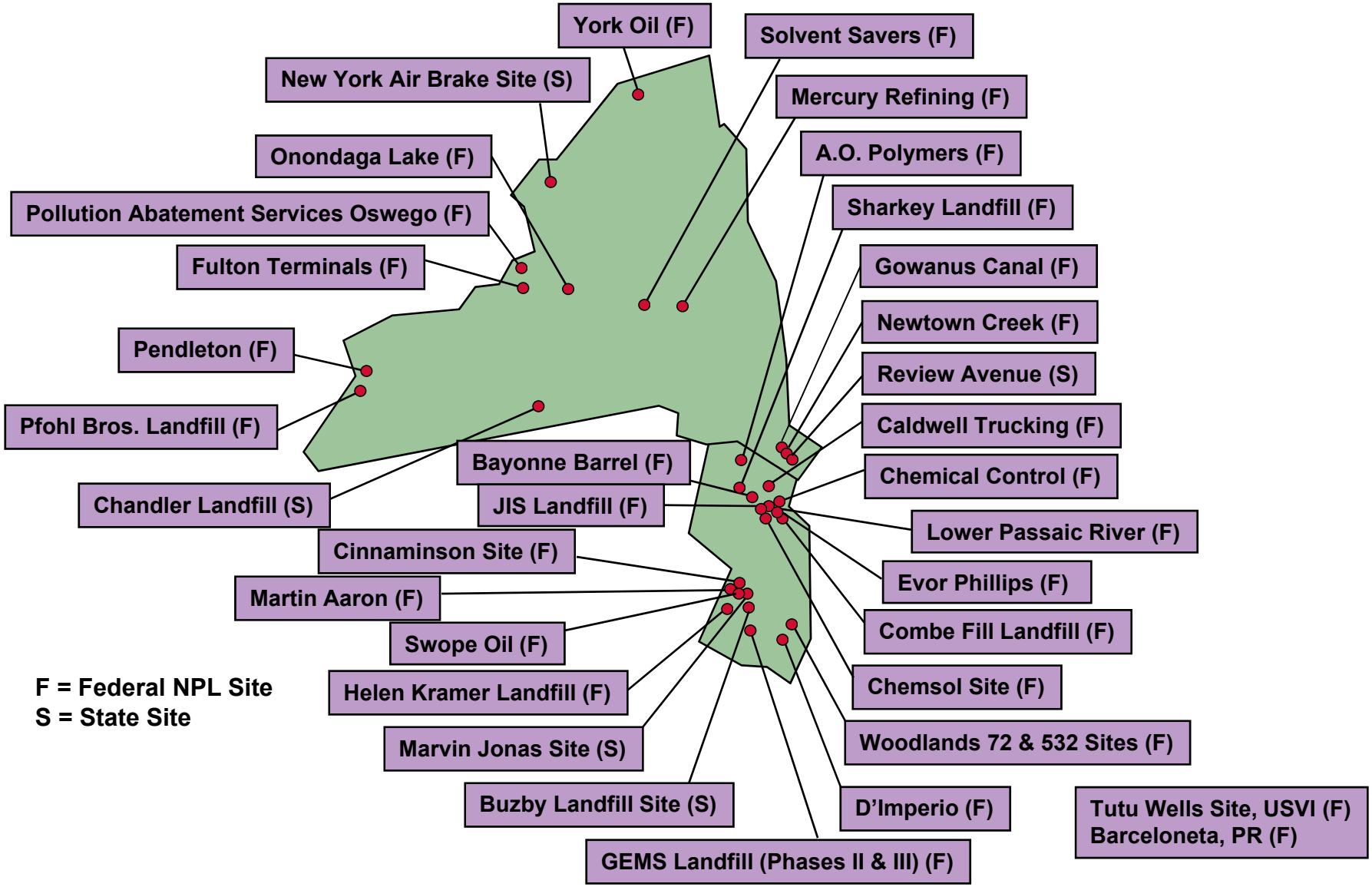
de maximis has provided coordination and management services to Potentially Responsible Party (PRP) Groups at over 100 federal and state multi-party sites nationwide (see below). Our clients have avoided millions of dollars of remedial costs through our proactive management of all phases of remediation (RI, FS, RD, RA, ERA and O&M) and our successful negotiation of favorable Statements of Work (SOW), Explanations of Significant Difference (ESD) and Records of Decision (ROD). We effectively apply our in-depth knowledge of regulatory policies, protocols and guidance, remedial technologies and experience/precedence on other projects to establish a track record of reducing costs while improving quality. ***de maximis*** has also assisted corporations and industries with common interests on non-Superfund projects, such as airport remediation, facilities assessment and remediation of property where buyer(s) and seller(s) are sharing costs.

Multi-Party Site Project Management Experience [Alphabetical by Site (EPA Region – Phase)]

A.O. Polymers (II– IQAT)
Aberdeen (IV– RD/RA/O&M)
Acton Site (I– RD/RA/O&M)
Alternate Energy Resources (IV– RD/RA)
American Chemical Services (V– RD/RA)
Ark. Waste To Energy (VI– ERA)
Ashland (V– RD)
Ashtabula River (V– RA)
Atlantic Phosphate Fertilizer Plant (IV– ERA)
Auburn Road Landfill (I– RD/RA)
Barceloneta (II– RI/FS)
Bayonne Barrel (II– RD/O&M)
Bay Drum (IV– RD/RA/O&M)
Bennington Landfill (I– RI/FS/RD/NTCRA/SACM/O&M)
Berks Landfill (III– IQAT)
Berlin & Farro (V– RI/FS/RD/RA)
Blosenski Landfill (III– RD/RA/O&M)
Boarhead Farms (III– RD/RA/O&M)
Bofors Nobel (V– RD/RA/O&M)
Burgess Brothers Landfill (I– RI/FS/RD/RA/SACM/O&M)
Butler Mine Tunnel (III– IQAT)
Buzby Landfill (II– RA/O&M)
Caldwell Trucking (II– RD/RA/O&M)
Cardington Road Landfill (V– RI/FS/RD/RA)
Centerdale Manor (I– RD)
Chandler Landfill (II–RD)
Chatham Brothers (IX– RI/FS/HRA/RD/RA/O&M)
Chemical Control (II–RD/RA/O&M)
Chemsol Site (II–RI/FS/RD/RA/IRM/O&M)
Cinnaminson Groundwater (II– RD/RA)
Delta Quarries (III–RD/RA)
Dixiana (IV– O&M)
D'Imperio (II– RD/RA/O&M)
Dorney Road (Oswald) Landfill (III– RI/FS)
Duffy Brothers (I– RD/RA)
Eagle Harbor (X– RD)
EnviroChem (V– RD/RA)
Evor Phillips (II– RI/FS/RD/IRM
Fields Brook (V– RI/FS/RD)
Fike (Artel) (III– RD/RA/ERA/O&M)
Fox River AOC (V– RI/FS)
French Limited (VI– O&M)
Fulton Terminals (II– RD/RA/O&M)
Galaxy/Spectron (III– RD/RA)
Garland Road Landfill (V– ERA)
Gary Development LF (V– RI/FS)
GEMS Landfill Phase II (II– RD/RA/O&M)
Gibson Oil (IX– RI)
Glendale Chromium (IX– RI/FS, RD/RA)
Gowanus Canal (II– RD)
Green River Disposal (IV– RD/RA/O&M/IQAT)
Grove Street (I-RD/RA)
Gulf Nuclear (VI– RI/FS)
Gurley Pesticides Burial (IV– ERA)
Hamby Site (IV– ERA)
Harbor Island (X– RD)
Helen Kramer Landfill (II– O&M)
Heleva Landfill (III– IQAT)
Industri-Plex (I– RD/RA)
I.J. Recycling – Clinton Street (V– ERA)
I.J. Recycling – Covington Road (V– ERA)
Industri-Plex (I– RA)
Iron Horse Park OU2 (I– RD/RA)
JIS Landfill (II– RI/RD/RA)
Kent County (Houston) Landfill (III– RI/FS/O&M)
Keystone Landfill (III– RD/RA/O&M)
Landfill & Resource Recovery (I– RD/RA/O&M)
Liquid Disposal, Inc. (V– RD/RA/O&M)
Lower Passaic River (II– RI/FS)
Macon/Dockery (IV – RD)
Malvern TCE Site (III– RD/RA)
Marion (Bragg) Landfill (V– RD/RA/O&M)
Martin Aaron (II– RI/FS/RD/RA)
Marvin Jonas (II– ERA/RI/FS)
Maxey Flats (IV– RD/RA)
Mercury Refining (II– RD/RA)
METCOA (III– ERA)
Metro Container (III– TRCA/RI/FS)
MIDCO I & II (V– RD/RA)
Millcreek Dump (III– RD/RA)
Northside Landfill (V– RD/RA/O&M)
Newtown Creek (II– RI/FS)
Novak Sanitary Landfill (III– RI/FS/RD/RA/O&M)
Nuclear Metals (I– RI/FS/NTCRA)
Old City of York Landfill (III– RI/FS)
Omega (IX– RI)
Ottawa River (V– RA)
Palo Seco Site (II– RI/FS)
PAS Irwin (II– ERA)
PAS Oswego (II– RI/FS/RD/RA/O&M)
Patrick Bayou (VI– RI/FS)
Peak Oil (IV– RD/RA/O&M)
Pendleton (II– RD/RA)
Petroleum Products (IV– ERA/RD/RA/O&M)
Pfohl Brothers Landfill (II– ERA/RD/RA)
Pine Street Barge Canal (I– RD/RA)
PSC Resources (I– IQAT)
Pulvair (IV– RI/FS)
Quanta Resources (II– RD/RA)
Quincy Municipal Landfill (V– RI/FS/RD/RA)
Rasmussen Landfill (V– RD)
Revere Chemical Site (III– RI/FS/RD/RA/ERA/O&M)
R&H Oil (VI– RI/FS)
Ringwood Mines (II– RD)
Rosen Electric (IX– RD/RA)
SCRDI/Bluff Road (IV– RI/FS/RD/RA/O&M)
SAAD Site (IV– ERA)
Sharkey Landfill (II– RD/RA)
Solvents Recovery Service Of NE (I– NTCRA/RI/FS/RD/RA/O&M)
Solvent Savers (II– RD/RA/O&M)
Stono Phosphate Fertilizer Plant (IV– ERA)
Sunrise Landfill (V– RI/FS)
Swift Agri-Chem Fertilizer (IV– ERA)
Swope Oil (II– RI/FS)
Tex Tin (VI– RD/RA)
Tutu Wells Site (II– RI/FS)
Valley Crest Landfill (V– RI/FS)
Wadesboro Fertilizer Plant (IV– ERA)
Woburn Wells G&H (I– RI/O&M)
Woodlands Rt. 72 (II– RD/RA/O&M)
Woodlands Rt. 532 (II– RD/RA/O&M)
Woodstock Landfill (V– RI/FS)
Yakima Railroad Area (X– RI)
Yeoman Creek (V– RD/RA)
York Oil (II – RI/FS/RD/RA/O&M)

FIGURE 1

EPA Region II/NY & NJ
de maximis Projects



de maximis

DANIEL N. GAINER, PG
Professional Qualifications

Mr. Gainer is a professional geologist with over 35 years of environmental project management, site investigation, remediation construction, remedial dredging, sub-aqueous capping, wetland remediation & restoration, demolition and water resources project management experience with industry, Federal Government, and other regulatory agencies. The majority of this experience has been in the area of hazardous waste with extensive experience at RCRA and CERCLA related sites, and major petroleum sites in 28 states, Puerto Rico and Mexico. He also has experience with reclamation of abandoned surface mines and the closure of a uranium mine and mill.

Previously, he has twice been a National Program Manager for private industry and government programs, General Manager of an engineering office and a Regional Director of Remediation. He also speaks Spanish.

Education/Professional Affiliations

B.S., Geology, West Virginia University, Morgantown, West Virginia, 1980

Graduate Studies, West Virginia University, 1983

Representative Major Projects

- On-Site Project Manager on a $451 million hydraulic dredging and associate multi-layer, subaqueous lake-bottom capping CERCLA remediation project on Onondaga Lake, Syracuse, NY. Primary responsibilities were assisting the client with operations for a 24/7 dredging remediation operations. Major project activities include continuous dredging and transportation of 2.2 million yd3 of contaminated sediments (chlorinated solvents and metals) which were transported via a 4-mile pipeline/booster-pump system and the separation, treatment, storage and disposal of sediments in a client operated landfill and the treatment/discharge of dredge related waters via 5600 GPM water treatment plant. Treated water was discharged to the local POTW and/or lake.

- On-Site Project Manager on a $50 million dredging remediation project on the Ottawa River, Toledo, Ohio. Primary responsibilities were assisting the Project Manager with startup operations, construction and operation of a 5,000 GPM wastewater treatment plant, and rotating-shifts during the 24/7 dredging operations. Major project activities included continuous hydraulic dredging and transportation of 250,000 yd3 of contaminated sediments (PCBs, chlorinated solvents, and metals). treatment/discharge of dredge related waters. Temporary storage of hazardous materials which were then dewatered and stabilized prior to off-site shipment/disposal. Non-hazardous materials were placed in a ***de maximis*** constructed and operated landfill. All work performed under strict local, state and federal oversight.

- On-Site Project Manager on a $75 million dredging remediation project on the Ashtabula River, Ohio. Primary responsibilities were supervising startup operations and night-shift operations for a 24/7 dredging remediation operations. Major project activities included continuous dredging and transportation of 750,000 yd3 of contaminated sediments (PCBs, chlorinated solvents, metals and radionuclides) which were transported via a 13,000 feet pipeline/booster-pump system and the separation, treatment, storage and disposal of sediments in a ***de maximis*** operated landfill and treatment/discharge of dredge related waters.

- On-Site Project Manager on a $15 million river dredging and associated wetlands excavation and capping on a New England CERCLA Site. Stabilized dredged sediments for off-site disposal. Capped, reconstructed and planted excavated wetlands and non-excavated bordering uplands. Met frequently with EPA and its oversight contractor.

- On-site Project Manager on a $2 million wetland remediation project at a CERCLA Site in Tampa, Florida. Excavated, capped and reconstructed wetlands in preparation for planting with native species.

- On-Site Project Manager for a $750K Ohio Natural Resources Damages project which returned a 160-acre farm back into wetlands and associated upland habitats for inclusion into the federal wildlife refuge system near Lake Erie. Supervised removal of over 1,100 feet of flood-protection dikes, demolition of structures, installation of fences, installation of interconnected drainage-conduits and the preparation of the former farm for planting with wetland and upland native trees, shrubs and grasses. Worked closely with US Fish & Wildlife and several state agencies.

DANIEL N. GAINER, PG
Professional Qualifications

- On-Site Project Manager. Assisted a major petroleum client in the management of a $6.5 million demolition of a former industrial site and marine terminal in Northern New Jersey. Project involved securing multiple permits from a variety of state, local and federal agencies, pre-demolition surveys, management of land based and marine-based demolition activities, management and disposal of multiple waste streams and major reconstruction of a marine shoreline. Assisted client in near-constant communications with, and inspections from, multiple regulatory agencies. Demolition created a nearly constant "oil-sheen" on adjacent marine bay. Managed sheen-control efforts to satisfaction of multiple agencies without receiving citations or NOV's. Over 43,000 labor hours were accomplished with a union workforce without experiencing any first aid incidents, injuries or lost time accidents.

- Project Manager of a $4 million RCRA investigation at a major Gulf Coast chemical manufacturing plant with 23 Solid Waste Management Units (SWMUs). Delineated vertical/ horizontal extent of dense non-aqueous phase liquids (DNAPLs) and associated dissolved phase plumes using a variety of cutting-edge technologies and modeling techniques. Designed/ implemented interim corrective measures (ICMs) and corrective measures studies (CMS). Participated in numerous negotiations with state and federal regulators.

- On-Site Project manager CERCLA Site, California. Assisted client group in the management of a $6 million removal action and demolition of a petroleum reclamation facility (former refinery site). Removed approximately 130,000 tons of soils, 50,000 tons of concrete and over one mile of piping. Performed work under strict regulatory oversight. Over 50,000 labor hours and 1 million miles of truck operations were accomplished without experiencing any first aid incidents, injuries, traffic accidents or personnel lost time incidents.

- Project Manager of a $4million RCRA Facility Investigation at a major Gulf Coast chemical manufacturing facility. Additionally assisted client in the design/construction of a $3 million, 200,000 GPM industrial wastewater/cooling water canal through multiple operational SWMUs into a marine estuary. Prepared QA/QC plans, work plans, data management plans, and H&S plans. Obtained new NPDES permit for thermal and industrial outfall. Assisted clients in negotiations and correspondence with state and federal regulators.

- Project Manager of a $4 million investigation and associated remediation system at major industrial defense site in North Texas for explosives, metals, and chlorinated solvents.

- Regional Director of Remediation and compliance on a major $20 million fuels remediation program at seven military facilities. Directed engineering, risk assessment, health and safety activities, developed and tracked budgets. Directed technical activities of seven project managers in seven states.

- National Program Manager of a $12.5 million UST/AST-pipeline compliance and remediation program. Directed the activities of 12 project managers across the US. Designed a comprehensive compliance/auditing database. Determined risk for petroleum and mixed wastes. Prepared extensive H&S plans. Removed/remediated over 1,400 non-compliant systems. Designed and installed large ASTs. Modified or prepared SPCC plans.

- National Program Manager for a major petroleum refined products and pipeline client. Supervised the activities of six project managers in multiple states. Held regular meetings with client's on-site environmental managers and representatives of regulatory agencies. Provided client management with quarterly status and budget/schedule updates.

- Project Manager of a $3 million investigation, remediation and demolition of a large trucking terminal in Tennessee. Demolition involved disposing of multiple waste streams from buildings, storage tanks, pipelines and utility corridors/conduits. Site soils/groundwater were remediated within two-year period and site closure obtained.

- On-site Project Manager for $2 million RCRA investigation at a defense contractor facility in Northern Utah for chlorinated solvents. Investigation delineated vertical and horizontal extent of chemicals of concern near a major residential area.

DANIEL N. GAINER, PG
Professional Qualifications

- Project Manager for continuing compliance inspection and reporting at a remediated CERCLA site in Puerto Rico. Interface with officials from the local Municipio and their consultants. Meet with federal and state officials. Site successfully delisted from CERCLA. Perform annual inspections of the site to ensure Municipio is meeting their O&M obligations. The majority of work is conducted in Spanish. Much of the work is conducted in Spanish.

- On-site Project Manager for the realignment of a creek contaminated with VOC, metals and PCBs at a CERCLA site in northern Ohio. Work involved excavation of contaminated materials, placement/compaction of clean fill, lining new channel with an impermeable barrier and crushed stone and rip-rap. Work also included the subsequent sampling of surface water, stream bank and floodplain soils. Materials removed from the creek are contained in an on-site CERLA landfill. Prepare monthly compliance reports for the landfill

- Project Manager for environmental investigation at a pharmaceutical plant expansion in Puerto Rico.

- Served as assistant project manager and the lead field geologist on the 2nd phase of a CERCLA RI in Puerto Rico. Located and installed monitoring wells to the west of the city and electronics manufacturing facilities. Assisted in the preparation of the supplemental RI report. Involved in discussions with EQB and USEAP officials. Developed an alternative potable public water supply. The majority of work was conducted in Spanish.

- Supervised and documented the collection, packaging and shipment of numerous surface water, sediment and stream-bank soil samples as part of a larger RI at a CERCLA Site in Puerto Rico. Primary contaminant in the creek was mercury from manufacturing facilities located along the stream. Assisted in the review and submittal of the RI Report.

- Performed an RI at a 446-acre smelter slag site in Northern Utah. Five lead and copper smelters operated at the site. The former operations contaminated groundwater and soil with multiple heavy metals (including mercury). Installed soil/slag test pits, piezometers and monitoring wells. Collected numerous surface water, groundwater, soil and slag samples. Delineated a metals plume impacting an associated wetland area and adjacent river. Assisted in the preparation of subsequent CERCLA RI report.

- Managed field operations and investigations related to fuel releases and specified remedial options for large public utility in Puerto Rico. Provided assistance to the client with RCRA and Superfund issues. Assisted utility in organizing process to obtain thermal discharge variance permit. The majority of the work was conducted in Spanish.

- Served as the lead field geologist on a CERCLA RI at a US Navy fuel depot and materials storage center in Virginia. Supervised the location and installation multiple groundwater monitoring wells at a US Navy port. Performed or supervised the related logging/soil sampling during the installation of the monitoring wells. Potential contaminants of concern were fuels, metals, solvents and asbestos (in the soils). Assisted in the preparation and submittal of the RI Report.

- Served as the lead field geologist on a CERCLA RI at a federal facility where fuels, metals and other materials (solvents) were reportedly leaking into a marine estuary. Supervised the location and installation multiple groundwater monitoring wells at a US Coast Guard fuels and materials storage facility. Performed and supervised the related logging/soil sampling during the installation of the monitoring wells. Assisted in the preparation and submittal of the RI Report. USEPA determined the site did not qualify for inclusion on the NPL.

- Project Manager for major environmental investigations for pharmaceutical company at sites in the southeast US where they desired to construct a new major plant.

- Assisted in investigation, design and construction of flood-control projects in several states. Assisted in construction/supervised the repairs/modifications on large earth-filled dams. Performed extensive geotechnical, groundwater, and materials testing in portable field laboratories.

- Performed geological and ecological analyses of wetlands and estuaries (freshwater and marine) on a variety of projects.

APPENDIX B

de maximis, inc.

Quality Management Plan

March 20, 2019

Revision 1

CONCURRENCE

1. NAME: Bennie L. Underwood, P.E.

TITLE: President

Signature: Bennie L Underwood Date: 26 MAR 2019

2. NAME: Bruce R. Thompson

TITLE: Quality Assurance Officer

Signature: Date: March 20, 2019

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Figures

Figure 1.0 Organization Chart

1. Introduction

de maximis, inc. (*de maximis*, or the Company) is a specialized consulting firm that provides customized management, technical and financial services to corporate clients undertaking major environmental projects. Since 1988, the Company's work has involved day-to-day management of environmental projects, including resource allocation and ongoing technical and management review. The Company's approach has proven effective for managing Superfund projects such as Remedial Investigation/Feasibility Studies (RI/FS), Remedial Design (RD)/Remedial Actions (RA), Emergency Removal Actions (ERA), Non-Time Critical Removal Actions (NTCRAs), and Operations and Maintenance (O&M), acquisition/divestiture, RCRA corrective action, and other types of environmental projects by ensuring required project tasks are performed in a proactive, timely and cost-effective manner.

The Company's philosophy focuses on meeting the needs and desires of its clients in a cost-effective and efficient manner. The Company employs a fluid, flexible management structure dependent on individual project and client needs with a task – based orientation. A team approach is utilized where a Project Director acts as the primary Agency and Client liaison, with a Project Manager or Project Engineer handling day-to-day project activities, including oversight of field work. Additional staff members may be consulted in their various fields of expertise to provide the best possible service to clients.

The goal of this document is to support long-term corporate success through a structured review of quality and project management approaches, with a specific focus on how the Company can best continue to meet and exceed client expectations.

In May 2000, the U.S. Environmental Protection Agency (EPA) issued Order 5360.1 CHG 2, *Policy and Program Requirements for the Mandatory Quality System*, which provides requirements for the conduct of quality management practices, including quality assurance (QA) and quality control (QC) activities, for all environmental data collection and environmental technology programs performed by or for EPA.

The primary goal for the Agency-wide Quality System is to ensure that environmental programs and decisions are supported by the data of the type and quality needed and expected for their intended use, and that decisions involving the design, construction, and operation of environmental technology are supported by appropriate quality assured engineering standards and practices. The *EPA Quality Manual for Environmental Programs, 5360 A1*, May 5, 2000 provides program requirements for implementing the mandatory Quality System defined in Order 5360.1 CHG 2.

In accordance with Order 5360.1 CHG 2, EPA requires that environmental programs be supported by a quality system that complies with the American National Standard ANSI/ASQC E-4-1994, *Specifications and Guidelines for Quality Systems for*

Environmental Data Collection and Environmental Technology Programs. ANSI/ASQC E-4-1994 is a national consensus standard that provides a basis for planning, implementing, documenting and assessing an effective quality system for collecting and evaluating environmental data for decisions and for use in the design, construction, and operation of environmental technologies.

As a result of EPA's implementing program-wide quality requirements, non-EPA organizations that perform work either directly funded by EPA or in response to EPA agreements, including consent agreements and enforcement actions, must now document their quality system in a Quality Management Plan (QMP). In order to comply with Consent Decree requirements[1] on a variety of existing and potential projects, this QMP was developed in accordance with *EPA Requirements for Quality Management Plans QA/R-2,* EPA/240/B-01/002, March 2001. The EPA QMP guidance is EPA's interpretation of the ANSI/ASQC E-4-1994 quality system standard.

As discussed in EPA's *Guidance for Developing Quality Systems for Environmental Programs, QA/G-1*, EPA/240/R-02/008, November 2002, the EPA quality system is an evolution of the Total Quality Management (TQM) method that has been adopted by the Federal Government. EPA's system is characterized by the principle of the graded approach in developing a quality system. This means that organizations base the level of QA and QC applied to the project on the intended use of the work product and on the confidence needed and expected in the quality of the work product. This system recognizes that a "one size fits all" approach to quality management is not appropriate and that quality systems of organizations and programs should and will vary according to the specific needs of the organization.

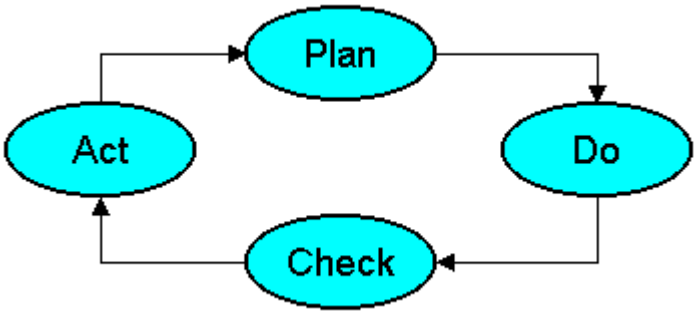
The unique project management role performed by the Company was considered in developing this QMP. Other key considerations include the flat, Project Coordinator-centric management structure of the Company, and the fact that all environmental data collection and environmental technology programs performed by the Company will be governed by project-specific work plans, quality assurance project plans, etc., which will provide for all necessary project-specific quality programs.

Accordingly, this QMP defines the Company's quality system, which is how the organizations manage their quality aspects in a systematic, organized manner. A quality system can be seen as developing in the following four phases:

[1] Typical RD/RA Consent Decree requirements for "Supervising Contractor" role include: "Settling Defendants shall demonstrate that the proposed contractor has a quality system that complies with ANSI/ASQC E4-1994 "*Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Programs*," January 5, 1999.

- Phase 1 – Initiation
- Phase 2 – Development
- Phase 3 – Implementation
- Phase 4 – Ongoing Maintenance and Improvement

Embedded in each phase are activities that follow the Shewhart cycle (as defined by Shewhart and modified by Deming, in the ASQ Handbook, pages 13-14, American Society for Quality, 1999).



"Plan" means analyze the situation and develop solutions;
"Do" means implementing the planned solutions;
"Check" means assess the results of implementation; and
"Act" means take corrective action after assessment.

It is EPA policy that environmental data operations be planned using a systematic planning process based on the scientific method. The Shewhart cycle incorporates both a systematic planning process in its iterative approach and the scientific method in checking of the results of the planned solution. This cycle, whether applied in a quality or project management approach, assumes that it is not something that is performed once and for all. Rather, it is applied iteratively, as the system evolves. The concept of continual improvement is an implicit assumption of the cycle. Interestingly, this classic management cycle is a key connection between project management and the quality system, as it is critical to both improving project quality and delivering a successful project.

The quality system provides a framework for planning, implementing, and assessing work performed. This QMP encompasses both technical and administrative elements, including:

- quality policies and procedures;

- organizational authority;
- responsibilities;
- accountability; and,
- procedures and practices.

This QMP describes all the elements of the Company's quality system that are necessary to comply with EPA requirements, tailored to specific corporate needs.

2. Background

2.1. Project Management

Project managers often talk of the "triple constraint" – project scope, time and cost – in managing competing project requirements. Project quality is affected by balancing these three factors. High quality projects deliver the required product, service or result within scope, on time, and within budget.

The relationship among these factors is such that if any one of the three factors changes, at least one other factor is likely to be affected. Project managers also manage projects in response to uncertainty. Project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on at least on project objective.

It is the responsibility of any project manager to:

- Understand the project *requirements* and ensure they are thoroughly and unambiguously documented;
- Prepare a *project plan* with achievable cost, schedule, and performance goals;
- Identify and manage project *risks*;
- Ensure the *project team* is well-organized, adequately staffed, and working well together;
- Manage project cost, schedule, requirements, and design *baselines* so they are traceable;
- Report meaningful *metrics* for cost, schedule, quality, and risk;
- Conduct regular status and design *reviews*;
- Ensure the adequacy of project *documentation* and *testing*;
- Maintain meaningful *communications* among project stakeholders; and
- Manage the project to attain the project *goals* and achieve *stakeholder satisfaction*.

3. Management and Organization

3.1. Company Mission Statement

The mission of the Company is to meet the needs and desires of its clients in a cost effective and efficient manner. The Company is recognized for its' industry leading approach to environmental project management. The Company remains prepared to expand its range of services as necessary to meet the needs and expectation of its clients.

It is *de maximis's* philosophy that quality personnel with adequate time and sufficient resources will produce quality results. Success is measured by the Company's accomplishments on behalf of its clients, the loyalty of existing clients to the Company, job site safety, the satisfaction of the employees and the profitability of the Company.

3.2. Quality Assurance Policy

Quality Assurance (QA) is a fundamental component of the Quality Management Plan. Quality Assurance is defined as an integrated system of management activities involving planning, implementation, documentation, assessment, reporting, and quality improvement to ensure that a process item or service is of the type and quality needed and expected by the client.

Project-specific QA requirements are integrated as required into all programs that include the collection and analysis of data and involve producing environmental technical work-product. It is a goal to ensure that environmental data will be collected in a manner such that all data is of known and documented quality, suitable for its intended use and that technical work-product will be produced in accordance with specifications.

In the role as Project Coordinator and/or Supervising Contractor, the Company is typically responsible for ensuring that adequate project-specific quality assurance plans and processes are developed to achieve individual project quality standards. Project Coordinators are responsible to ensure that adequate resources are allocated to achieve the quality standards on their projects.

3.3. Technical Activities and Programs Supported by the Quality System

All organizations conducting environmental programs funded by EPA are required to establish and implement a quality system. In addition, non-EPA organizations are required to document their quality system in a Quality Management Plan. The requirement for us to have a QMP is contained within project specific enforcement mechanisms, such as consent decrees or administrative orders.

The Company's projects typically include but are not limited to the following areas of services: subsurface investigation, collection of environmental data in the field, collection of samples for laboratory analysis, performance of field treatability studies, design of technology systems, installation of systems, operation of systems, and the preparation of reports. However, the above range of activities will be covered by project-specific quality requirements developed in the appropriate site deliverables.

The Company was founded to provide independent project management services, with a senior individual filling the role of "Project Coordinator," when required by an agency Unilateral Administrative Order (UAO), Administrative Order on Consent (AOC) or Consent Decree (CD). The Project Coordinator must have sufficient technical expertise to oversee all aspects of the particular work at a site, as he or she is the individual responsible for administration of all of the actions called for by the UAO, AOC or CD. The Project Coordinator is the counterpart to the agencies Remedial Project Manager

As a natural extension to providing an individual to act as the Project Coordinator, the Company has also retained as the "Supervising Contractor" for certain projects. This is a required role under some UAOs, AOCs or CDs, which require that the performing parties hire a qualified environmental professional, with substantial expertise and experience in the cleanup of hazardous waste sites, to supervise and direct the implementation the required work, including remedy review, quality assurance, sampling and data analysis, and emergency response.

The aspects of the Company's work for which this Quality Management Plan applies includes the following activities unique to its brand of project management:

<u>Technical Management</u>

- Agency negotiation and technical liaison
- Development of Scope of Work (SOW)
- Coordination of bidding process (RFP, bid review, contractor selection)
- Schedule development and progress tracking
- Technical document review, review coordination and input

<u>Administrative Management</u>

- Coordination and documentation of internal and external meetings and conference calls
- Distribution of reports to regulatory agencies and involved parties
- Contract development, negotiation and management
- Preparation and distribution of progress reports
- Coordination of public affairs / public relations
- Document management, retention and tracking

Financial Management

- Track, report and project on all costs incurred by project contractors and consultants
- Review and approve contractor(s)' invoices
- Review, negotiate and recommend approval of change orders or budget modifications

Construction Management/Oversight

- Represent client on all construction activities to protect client's commercial interests
- Manage all pre-construction activities
- Oversee all construction work to ensure compliance with contract documents and schedule
- Coordinate/resolve design changes or constructability issues raised by contractor
- Coordinate preparation and timely review of all submittals and shop drawings
- Perform administrative, technical and financial management elements, as above

Independent Quality Assurance Team (IQAT)

- Verify implementation of Construction Quality Control Plan and Construction Quality Assurance Plan
- Verify the proper implementation of all testing, monitoring and methodologies required by specifications
- Periodically observe and document the performance of the Engineer's and Contractor's work
- Report directly to Client regarding all observations and evaluations

Fund Management

- Establish the Trust and Tax Identification Number (Qualified and Non-Qualified Accounts),
- Establish a bank account under the tax identification number (if needed).
- Set up an accounting system is established to meet the reporting needs of the client and potential tax reporting needs,
- Set up an appropriate filing and accounting system to adequately maintain records and provide the flexibility to establish a record keeping system to meet the reporting needs of the client,
- Prepare quarterly accounting reports showing all items of income, disbursement and contributions,
- Issue cash calls on frequency established by client; track the receipt of payments against the cash call, recording the date of payment and identifying any outstanding payments,
- Pay approved invoices; record and deposit receipts
- Track individual participant information based on allocation

- Maintain financial records and reports. Standard reports include (but are not limited to): Balance Sheet; Income Statement; Cash Flow Statement; Accounts Payable; Ledger; Accounts Receivable Ledger; Cash Disbursements; and Cash Receipts. The Company generates other reports requested by the client.
- Prepare tax reports to the clients (tax forms prepared by independent accounting firm)

The identification and initiation of QMP practices will occur at a project initiation meeting. This meeting will include the participation of the Project Coordinator, Project Manager, and other project personnel as appropriate. The initiation meeting will include a discussion of the level of project management knowledge areas necessary, specific elements of the quality system that apply to the project, and the QA/QC needs for assuring that these elements are understood and implemented.

3.4. Dispute Resolution

In general, the intent of the QMP and the Quality Assurance Policy is to make every effort to assure that appropriate quality measures are undertaken. On occasion, however, disputes may be anticipated to arise regarding the specific application of QA measures to a project. Dispute resolution will be the responsibility of the QAO and such incidents will be brought to the attention of the QAO as soon as possible. The QAO, at her/his discretion, will include the participation of the Project Coordinator or the President, as necessary to resolve disputes.

3.5. Responsibilities

3.5.1. The President has the ultimate responsibility for implementing the QA program. Specific QA responsibilities for other personnel are as follows:

3.5.2. Board Members and Office Managers – Board Members and Office Managers, as the primary supervisors of Project Coordinators and in their role themselves as Project Coordinators/Supervising Contractors, can directly evaluate the effectiveness of the planning, implementation and assessment components of the Quality System. Board Members and Office Managers specifically have the responsibility for:

- Ensuring that quality management is an identified activity and that adequate resources are provided to accomplish the program quality goals;
- Ensuring that in-house team members are familiar with the QMP;
- Ensuring that data of the type, quantity and quality necessary to support environmental decisions are obtained and used for all programs;
- Ensuring that all projects and tasks involving environmental data

operations and technical work-product activities are supported by a documented Quality System and covered by an approved project-specific QAPP which identifies and documents the project quality objectives;

- Ensuring that a systematic planning process is used to determine technical and QA/QC activities for all environmental data operations and project management activities;
- Ensuring that the results of the systematic planning process are documented in a project-specific QA planning document (e.g. QAPPs, Sampling and Analysis Plans [SAPs], etc.), and that routine technical activities are documented in Standard Operating Procedures (SOPs) where appropriate;
- Ensuring that project-specific approved QAPPs are reviewed annually and updated as necessary for continued adequacy;
- Ensuring that enough auditing is performed to determine compliance with QA/QC requirements and that appropriate qualified personnel perform the auditing;
- Ensuring that deficiencies identified in audits are corrected expeditiously; and
- Ensuring that project-specific QA planning documents are reviewed and approved for all environmental data operations and technical work-product activities prior to initiation of field work;

3.5.3. Quality Assurance Officer - the Quality Assurance Officer (QAO) is responsible for developing and documenting company QA policies, procedures and guidance, overseeing Quality System implementation and assessment, and providing QA training. Other specific responsibilities of the QAO include the following, as required:

- Facilitating implementation of the QMP;
- Conducting annual reviews and recommending subsequent updates, as necessary, to the QMP within the five-year approval period;
- Acting as official contact to the Company in all QA matters and for communications to Corporate Management, as well as to other personnel within the Company;
- Providing expert assistance to staff on QA/QC policies, requirements and procedures applicable to the implementation of the QMP for all environmental data operations and activities involving producing technical work-product;
- Assessing QA/QC training needs and providing training;
- Preparing policies, procedures and guidance to facilitate implementation of QA requirements;
- Providing input to and comment on company-wide QA policy by performing peer review of documents and/or participating in internal workgroups; and

- Preparing QA Annual Reports and submitting the report to the President.

3.5.4. Project Coordinators - As primary supervisors of project personnel, Project Coordinators can directly evaluate the effectiveness of the planning, implementation and assessment components of the Quality System. Project Coordinators are responsible for:

- Ensuring that quality management is an identified activity and that adequate resources are provided to accomplish the program quality goals;
- Ensuring that team members are familiar with the QMP;
- Ensuring that data of the type, quantity and quality necessary to support environmental decisions are obtained and used for all programs;
- Ensuring that all projects and tasks involving environmental data operations and technical work-product activities are supported by a documented Quality System and covered by an approved QAPP which identifies and documents the project quality objectives;
- Ensuring that a systematic planning process is used to determine technical and QA/QC activities for all environmental data operations and project management activities;
- Ensuring that the results of the systematic planning process are documented in a QA planning document (e.g. QAPPs, Sampling and Analysis Plans [SAPs], etc.), and that routine technical activities are documented in Standard Operating Procedures (SOPs) where appropriate;
- Ensuring that approved QAPPs are reviewed annually and updated as necessary for continued adequacy;
- Ensuring that sufficient auditing is performed to determine compliance with QA/QC requirements and that appropriate qualified personnel perform the auditing;
- Ensuring that deficiencies identified in audits are corrected expeditiously; and
- Ensuring that QA planning documents are reviewed and approved for all environmental data operations and technical work-product activities prior to initiation of field work;

3.5.5. Project Managers – As the primary project workers, Project Managers are responsible for:

- Ensuring that quality management is an identified activity with associated resources adequate to accomplish program quality goals;
- Ensuring that all sampling, analytical, and/or data handling practices are documented in project-specific SOPs, and that SOPs for all project-specific programs are developed as functional, accurate documents that

are initially approved and annually reviewed for continued adequacy;
- Assessing the QA/QC training needs of their staff and arranging for such training with the QAO or QAO;
- Ensuring that staff utilizes current guidance and requirement documents from the QAO to assure uniform application of QA policies and procedures;
- Ensuring that projects are supported by a documented Quality System and that a systematic planning process is used to determine project quality objectives/data quality objectives (DQOs) for each environmental data operation and technical activity conducted;
- Ensuring that the results of the planning process are sufficiently documented in approved QA planning documents prior to work initiation;
- Ensuring staff participation in the review of project quality objectives/DQOs, QAPPs, SAPs, and other QA documents;
- Ensuring that the QAPP has been implemented as described (i.e., that program audits are performed as necessary) and that adequate review or validation steps have been employed to determine that only data of adequate quality are used in environmental decision making; and
- Ensuring that corrective actions are monitored for implementation and effectiveness.

3.5.6. Environmental Data Collection and Technical Staff

Environmental data collection and technical staff are responsible for:

- Ensuring that work is conducted in accordance with approved QA planning documents;
- Adhering to established sampling practices, protocols, and procedures as prescribed in QA planning documents;
- Adhering to good laboratory practices and methodologies as prescribed in QA planning documents;
- Documenting any deviations from established methodologies, SOPs and QC protocols, and reporting the deviations to their supervisor;
- Identifying possible data quality problems and potential areas for quality improvements, and reporting these to their supervisor; and
- Identifying to management any defective, outdated, or deficient SOPs and suggesting routine operations that may need SOPs.

4. QUALITY SYSTEM COMPONENTS

4.1. Quality System

The Quality System provides a management system designed to ensure the quality of work and services throughout the organization. The Quality System provides the

framework for planning, implementing, documenting and assessing activities relevant to environmental data operations and technical work-product activities and for carrying out required QA/QC activities for the organization. Since this document is designed to provide the framework for all applicable activities in the Company, no other Quality Management Plans are required. The goals and objectives of this system will be implemented using other QA/QC tools and project-specific documents. The Quality System is comprised of several functional components including the following:

- Documentation of project activities;
- Annual reviews and planning;
- Management assessments and reviews;
- Training;
- Systematic planning of projects;
- Project-specific quality documentation;
- Project and data assessments.

In order to implement and document the components of the quality system, a number of tools are available, including the following:

- Quality Assurance Project Plans;
- Project Performance Evaluations;
- Standard Operating Procedures;
- Data Verification and Validation Protocols;
- Training Programs;
- Peer Review Programs; and
- Annual Management Reviews and Planning.

An overview of the Quality System is presented below. The specific quality measures that are required by the QMP are applied using the quality assurance tools listed above for all required projects. At this point, the Project Manager is responsible to ensure that the appropriate project-specific tools are used. The Project Coordinator performs an oversight, review, and audit function for all appropriate projects. The specific tools available include the following, which are described briefly:

4.1.1. Quality Assurance Project Plan (QAPPs)

Site-specific QAPPs are prepared in accordance with EPA guidelines and are the primary vehicle for defining mandatory quality assurance measures that will be implemented for a project. Specific EPA guidance relating to the project-specific QAPP process includes:

- *EPA Requirements for Quality Assurance Project Plans, QA/R-5*,

EPA/240/B-01/003, March 2001;

- *Uniform Federal Policy for Quality Assurance Project Plans,* EPA/505/B-04/900A, March 2005;
- *Data Quality Objectives Process for Hazardous Waste Site Investigations, QA/G-4 HW,* EPA/600/R-00/007, January 2000;
- *Systematic Planning: A Case Study for Hazardous Waste Site Investigations, QA/CS-1,* EPA/240/B-06/004, February 2006;
- *Data Quality Assessment: A Reviewer's Guide, QA/G-9R,* EPA/240/B-06/002, February 2006;
- *Guidance on Quality Assurance for Environmental Technology Design, Construction, and Operation, QA/G-11,* EPA/240/B-05/001, January 2005;
- *Guidance on Systematic Planning using the Data Quality Objectives Process, EPA QA/G-4* (EPA/240/B-06/001), February 2006;
- *Data Quality Objectives Decision Error Feasibility Trials Software (DEFT) – User's Guide, EPA QA/G-4D* (EPA/240/B-01-007), September 2001;
- *Data Quality Assessment: Statistical Methods for Practitioners, EPA QA/G-9S* (EPA/240/B-06/003), February 2006;
- *Guidance for Quality Assurance Project Plans, EPA QA/G-5 (EPA/240/R-02/009),* December 2002;
- *Guidance for Geospatial Data Quality Assurance Project Plans, EPA QA/G-5G* (EPA/240/R-03/003), March 2003;
- *Guidance for Quality Assurance Project Plans for Modeling, EPA QA/G-5M (EPA/240/R-02/007),* December 2002; and,
- *Guidance for Choosing a Sampling Design for Environmental Data Collection, EPA QA/G-5S (EPA/240/R-02/005),* December 2002.

The Project Coordinator or designee is responsible for either preparing the QAPP or procuring a consultant to prepare the project-specific QAPP. The QAPP must be reviewed and approved by the supervising agency prior to performing data gathering activities.

4.1.2. Standard Operating Procedures (SOPs)

SOPs will be developed as needed for project-specific tasks including sampling procedures, design review, data review and report writing. These documents are updated to include best practices and are used as guidelines for appropriate project tasks. SOPs will be prepared using EPA's *Guidance for Preparing Standard Operating Procedures (SOPs), EPA QA/G-6* (EPA/600/B-07/001), April 2007.

4.1.3. Training Programs

Training is accomplished using both internal and external programs. The most

significant training is accomplished through Project Coordinator interaction with project team members as each project evolves.

4.1.4. Peer Review

The Project Coordinator's designee performs formal Peer Review of projects on an as needed basis. Typical triggers would include significant milestones in the project, major developments, etc.

5. PERSONNEL QUALIFICATIONS AND TRAINING

Achieving corporate goals and objectives requires that all management and staff performing tasks related to environmental data operations and technical work-product activities have the necessary skills and knowledge to effectively accomplish their work. *de maximis* is committed to ensuring that these employees are fully qualified and maintain an appropriate level of knowledge of QA principles and tools.

Commitment to Training

The Company's policy is to provide and/or make training, including QA training, available to management and staff as necessary to carry out their work successfully. Senior management takes the lead in ensuring that the necessary levels of technical proficiency and QA knowledge are maintained. Training goals are set for individuals during annual reviews and evaluated and reviewed at the next review.

Qualifications

The Company's policy is that personnel must have adequate experience qualifications for their positions within the firm. Applying sound QA policies and procedures requires that all staff performing QA tasks possess an appropriate knowledge level of QA procedures and principles. The Project Coordinators are responsible for ensuring that Project staff positions are properly qualified for their job needs. The QAO is responsible for developing personnel training programs for QA and QC procedures.

The Project Coordinators and the QAO are essential to ensure that personnel with QA responsibilities have performance plans and performance standards reflecting their QA work each year.

Professional Development and Training

The Company provides professional development and training through several internal and external programs. Needs assessments are conducted periodically to identify training needs for personnel and are discussed during annual reviews. Participation in external training programs, seminars, and technical meetings is encouraged.

Documentation

Documentation is maintained of personnel participating in training programs. This documentation is filed for each professional in his or her personnel records.

Training for Quality

The QAO works with Project Coordinators to assess QA training needs. In addition, the QAO identifies, develops and provides QA training to appropriate staff and contractors. These programs are held on a regular basis and are conducted as formal seminars, web-based training meetings, or presentation materials that can be reviewed by individuals. QA training is based on prioritized needs and implemented as resources permit.

6. PROCUREMENT OF ITEMS AND SERVICES

The Company's policy is to specify the designated QA and QC requirements when acquiring items and/or services that relate to environmental data operations and technical work-product activities. Contractors and suppliers are responsible for the quality of work performed or items and services provided by their subcontractors and suppliers.

Contracts

All applicable project procurement and contracts originating in *de maximis* must meet established administrative and quality assurance requirements. If quality requirements are applicable to the proposed new procurement/contract and QA documents are required pre-award, the Project Coordinator will review the pre-award QA documents to determine the capability of the contractor to adequately collect data of known and documented quality and/or to adequately perform technical work-product activities.

Similarly, Project Coordinators are responsible for ensuring that QA requirements are integrated to the extent necessary in project-specific RFPs, scopes of work and contracts.

7. DOCUMENTS AND RECORDS

Maintenance of documents and records (both printed and electronic) associated with a specific project is the responsibility of the Project Coordinator and the staff of the Project Coordinator within which he/she is located. Each Project Coordinator is responsible for establishing and implementing procedures for identifying, controlling, filing, storing, protecting, and accessing documents and records. Records provide objective evidence of an item or process and include data recording media,

photographs, and drawings.

Process for Identifying Quality-Related Documents and Records Requiring Control

The QAO identifies company-specific documents and records that require control in the and which are used in implementing the Quality System. The control of quality-related documentation and records is described in the following documents that are subject to the review of the QAO:

- Quality Management Plan;
- Company Standard Operating Procedures;
- QA document review reports;

Similarly, Project Coordinators involved in environmental data operations and environmental technical work-product activities control project-specific QA-related records (both written and electronic) including, but not limited to:

- Quality Assurance Project Plans;
- Chain of Custody Records;
- Field Sampling Notes;
- Field and Fixed Analytical Records for the transfer, preparation, and analysis of samples;
- Data Reports including analytical results forms; and
- Communication Records.

The processes for preparing, reviewing, approving, issuing, using, verifying, validating and revising quality-related documents and records are described in these project-specific QA documents.

Process for Ensuring Documents and Records Accurately Reflect Completed Work

Each Project Coordinator is responsible for establishing and implementing procedures for ensuring consistency and technical accuracy. Each Project Coordinator is also responsible for ensuring that records and documents accurately reflect completed work.

Process for Maintaining Documents and Records

Each Project Coordinator is responsible for establishing and implementing procedures for maintaining project-specific quality-related documents and records, including transmittal, distribution, retention, access, preservation, traceability, retrieval, removal of obsolete documentation, and disposition. The project-specific file system utilized by each project is the responsibility of the individual Project Coordinators, although the file

structure is expected to follow the corporate project file structure.

Confidentiality Procedures

Each Project Coordinator is responsible for establishing and implementing the project-specific chain of custody and confidentiality procedures identified in the project QAPP. The Project Coordinator is responsible for ensuring that required procedures are implemented.

8. COMPUTER HARDWARE, SOFTWARE AND INFORMATION PRODUCTS

The Company uses a variety of computer hardware and software systems during its project work. These systems support a broad range of project objectives, all of which require information integration and dynamic communication among internal and external users and clients. The Information Technology (IT) Department is responsible for managing the selection of system components, general system operation and maintenance, system integrity and security, and system planning. In this role, the IT Department has established information technology standards to ensure that information technology components integrate properly into the overall IT infrastructure and has developed information product standards to ensure that information deliverables can be readily integrated and used for a varied range of other uses.

8.1. Project Coordinator Information Management Systems

All development, improvements, and updates to the information management system will include a systematic and comprehensive dialogue among the data providers, data and system users, and system developers, prior to system design and installation. Compliance with the applicable information resource management standards will ensure that all hardware and software configurations are developed, installed, and tested prior to use to guarantee they perform as expected, are well documented, and meet end-user requirements.

8.2. Hardware and Software Requirements

In addition to the Quality System design issues detailed above, all purchases of computer hardware and software will be performed consistent with the IT requirements and will comply with the Company's technology and procurement guidelines.

8.3. Data Standards

In many cases, specific data standards may be mandated and identified in the QAPP for data produced in response to Federal and State regulations. The Company's policy is to identify such data needs, if required, and to comply with appropriate guidance concerning data standards. Each Project Coordinator is responsible for being aware of

the current standards and regulations.

9. PLANNING

The Company uses systematic processes to plan all aspects of environmental work, including strategic goal setting, quality management planning at the organizational level, and project planning. Several significant parts of the planning process are described in the following text.

9.1. Project Planning

Projects are initiated with a project-planning meeting that includes appropriate project personnel. The scope of work, technical approach, schedule, budget, and quality assurance measures are reviewed. Significant project milestones are developed, including project review meetings. A review of the resources required to complete the project is performed to ensure that appropriate personnel are available for the project. If appropriate, key subcontractors and/or suppliers will take part in the meeting.

Developing a project-specific QAPP for the project, if required, is also a part of the planning process. Issues that are addressed in the QAPP include the type and quantity of data needed to achieve project objectives, the expected use of the data and the data quality objectives associated with that use, and the guidelines for measuring data quality during the project. QAPPs require the review and approval of the Project Coordinator and respective agency project manager prior to implementing data gathering activities associated with the project.

9.2. Quality Management Plans

In accordance with the EPA policy, and as an organization that is performing environmental data operations and environmental technical work-product activities for qualifying enforcement programs, the Company has developed this Quality Management Plan. The document has been prepared using ANSI/ASQC E-4 (1994) specifications. The recommendations of this American National Standard Document are adopted by the EPA in the document *EPA Requirements for Quality Management Plans,* EPA/240/B-01/002, (March 2001), which has also been used as a guide in the preparation of the ***de maximis*** QMP. The QMP is reviewed and approved by the QAO and will be submitted to the EPA for approval, as necessary, on a project specific basis. The implementation of the QMP is a shared responsibility of all company personnel and is overseen by the QAOs. The QAO is responsible for keeping the QMP current, performing annual reviews of the Quality System, and resubmitting the QMP whenever revisions are necessary or at a minimum of every five years.

10. IMPLEMENTATION OF WORK PROCESSES

The Company's policy is to implement data collection operations and environmental technical work-product activities associated with environmental projects as described in the appropriate project-specific documents. These documents may include Field Sampling Plans, QAPPs, the project Scope of Work and contract documents, and SOPs. The QAPP includes a written description of all technical activities and QA/QC that will be performed. These descriptions may either be provided in the text of the QAPP document or as attachments of SOP documents.

10.1. Standard Operating Procedures (SOPs)

For routine activities such as field sampling, analytical methods, and data handling procedures, the Company develops and uses project-specific SOPs provided in and approved as part of the QAPP. These written protocols serve to ensure a standardized and consistent approach to work on an environmental project for a program. Standardizing sampling and analytical procedures provide a basis for generating representative data. In addition, SOPs include documented quality control provisions that are used to support data collection that will meet the measurement performance criteria for the project. Documented protocols also serve as a basis for performing technical systems audits.

The Project Coordinator or designee conducts training on the use of project-specific SOPs. This training module deals specifically with the components of an SOP, and how to review an SOP to ensure that a project activity, as described, will achieve the data quality objectives. The SOP training emphasizes the following:

- Identifying activities which need a SOP;
- The differences between published methods and organizational procedures;
- The differences between vendor manuals and organizational procedures;
- What information to include in an SOP, including QA/QC procedures and criteria;
- How to review a SOP for procedural inaccuracies and inconsistencies;
- The necessity of SOP approval signatures; and
- The relevance of SOP revision numbers, and modification process.

10.2. Responsibility for SOPs

The responsibility for identifying operations needing SOPs, and for preparing, updating, approving, withdrawing and archiving SOPs rests with the Project Coordinator responsible for the routine use of the specific procedure in conducting day-to-day activities. However, incumbent upon all staff is to identify operations needing SOPs or revisions to existing SOPs. Project Managers are responsible for ensuring that SOPs are implemented appropriately. SOPs are to be clearly and concisely written so that they can be easily followed without interpretation or assumption. SOPs are prepared by staff, reviewed and approved by Project Managers, and reviewed and updated as necessary. Current SOPs must be readily available to all personnel. Project Managers

are responsible for ensuring that current SOPs are followed. Modifications to current procedures must be documented and have supervisory concurrence. Outdated SOPs will be withdrawn from work areas and archived when no longer relevant. The QAO also identifies the need for standardizing procedures through Quality System assessments and technical system audits, which identify areas of inconsistency that would benefit from standardized procedures.

10.3. Responsibility for Quality-Related SOPs

The QAO or designee is responsible of the development of SOPs for implementing the Quality System. The QA SOPs will be subjected to internal review and approved by the QAO or designee. The Project Coordinator is responsible for insuring that the project-specific processes described in the SOPs are followed and implemented as written.

11. ASSESSMENT AND RESPONSE

The Quality System is comprised of four basic components:

- Planning,
- Implementation,
- Documentation, and
- Assessment

Assessment is the evaluation process used to measure the performance or effectiveness of a system and its elements. Assessments are a learning process intended to increase understanding of the program or system being assessed, and to provide a basis for improving such programs or systems. Assessments identify problems, reveal areas of strength and weakness, and allow management to evaluate the organization's processes and performance.

Quality System implementation assessment is the responsibility of the QAO. An appropriately trained designee of the QAO may also perform the assessment. The results of all formal project assessments are summarized for the Annual Quality Management Report.

Quality System Assessment

The Quality System is assessed annually, and the assessment is documented in an Annual Quality Management Report. Each December, the QAO requests, compiles and reviews information for appropriate projects including a review of quality resources and activities including 1) quality management resources, 2) QA training, 3) quality management accomplishments, and 4) quality management assessments. For any area found to need improvement, an action plan is developed and incorporated as a QA

activity for the upcoming year.

11.1. Conducting Assessments

The process used for planning, implementing and documenting assessments and reporting results to management is developed by the QAO. Periodic assessment of specific projects is conducted in accordance with appropriate project milestones. These written reports summarize the assessment and state both the findings of the assessment and recommendations for response actions. Without documentation in a final report, a review or evaluation is not considered a complete assessment.

The objective of the report is to communicate assessment results to the responsible level of management. Efficient communication of results allows management to implement timely, effective response actions so that the quality objectives can be met. The Project Coordinator is responsible for ensuring that any deficiencies found in Quality System assessments are appropriately addressed. Project Managers are responsible for ensuring that findings from assessments of project activities are appropriately addressed.

11.2. Corrective Actions

The Project Coordinator of the assessed project has the principal responsibility for implementing response/corrective actions. The assessed Project Coordinator will provide a response to the QAO with an assessment of the effectiveness of the correction, and with time frames specified for those actions in progress or planned.

The authority and responsibility for verifying the timeliness and effectiveness of corrective action resides with the Project Coordinator who is ultimately responsible for the work that was assessed. The Project Coordinator may request that the assessors who conducted the assessment verify the effective implementation of corrective actions. Assessment follow-up is documented and reported using the same process as the original assessment.

11.3. Dispute Resolution

If assessments and related responses result in disputes, then the dispute resolution process outlined in Section 3.4 of this QMP will apply.

Documentation and Tracking

The content requirements and format for documenting and tracking assessments includes:

- Assessment planning information including the criteria for the assessment;

- Checklist, questionnaire or other instrument for collecting and recording evidence;
- Assessment report;
- Follow up documentation verifying effective implementation of corrective action; and
- Assessment files containing the response from the assessed project, relevant communication and the documentation listed above.

12. QUALITY IMPROVEMENT

Senior management is fully committed to quality improvement as a continuing process by which the organization actively seeks to identify opportunities to improve the overall Quality System. Quality improvement looks to correct systematic problems, improve consistency, enhance individual system components, re-engineer ineffective work processes and procedures, and customize quality tools. Quality improvement is a basic part of the Quality System. Management and staff are encouraged to establish communications among themselves and with customers and suppliers to explore areas for improved service. All personnel are expected to identify areas for process improvement and to actively participate in problem solving. As a critical component of the Quality System, quality improvement provides an effective baseline for current and future involvement in environmental data operations and environmental technical work-product activities.

12.1. Annual Quality Management System Report

The QAO is required to report annually on the state of the Company Quality System. This QA Annual Report provides an opportunity for the Company to identify areas of performance as well as components of the Quality System that require correction or improvement.

The Annual Report serves to communicate major quality issues to management. Based upon this report, senior management prioritizes workloads and allocates resources, as necessary, to address quality needs. The QAO will utilize assessment findings to initiate quality improvement. In addition, if possible, the QAO will identify root causes of deficiencies; make recommendations for improvement; work with Project Coordinator and staff to implement corrective actions; and subsequently evaluate the effectiveness of corrective actions in an overall effort to improve quality.

12.2 Organizational Improvement Based on Assessments

External Quality System Assessments

It is anticipated that this QMP will be reviewed by EPA as it is submitted to meet project-specific requirements. The results of each project-specific review will be

reported by the Project Coordinator to the QAO. The QAO will then work directly with senior management to plan and implement corrective actions and modify the Quality Management Plan when and where appropriate.

Internal Quality System Assessments

At least one internal Quality System assessment is planned annually. The QAO communicates the findings and results of internal assessments to the affected Project Coordinators. Activities conducted during internal assessments include:

- Critical assessment of work performed;
- Identified or suspected problem areas; and
- Determining effectiveness of corrective actions or improvements to the Quality System.

As a follow-up to internal and external Quality System assessments, the QAO plans assessments to ensure the effectiveness of corrective actions that were implemented and to evaluate improvements that have been made to the Quality System.

12.3 Responsibility for Quality Improvement

All personnel are responsible for preventing quality problems whenever possible; identifying systematic problems in the Quality System; and reporting opportunities for quality improvement. Roles and responsibilities for identifying, planning, implementing and evaluating the effectiveness of quality improvement activities are shared throughout the organization and have been discussed throughout this QMP. Company policy requires the resolution of all issues that could potentially impact work quality and ultimately the environmental decision-making process.

Problems/issues with immediate solutions should be resolved in an appropriate and timely fashion by project staff. All significant problems and corrective actions should be documented, and if appropriate, referred to the QAO for evaluation. The QAO will evaluate the problem and determine if:

- The problem is an isolated non-conformance with Company policies, requirements or procedures, or
- The problem is recurring, indicating a systemic problem requiring "re-engineering" of a Quality System component, work processes and procedures, and/or training to prevent recurrence of system failures and deficiencies, or
- The problem is a result of inconsistent implementation of work procedures and Quality System processes. Historically, when "pockets" of inconsistent implementation are detected, a management team will be convened to investigate the issue, make recommendations, implement process and

procedural changes, and provide re-training.

In all cases, the QAO provides written reports that identify the quality issues and make recommendations for planning corrective actions, revising procedures and training. All corrections and/or modifications made to work processes and procedures are documented in new or revised standard operating procedures. Management is responsible for communicating identified problems and their resolution to their staff.

Enhancements to components of the Quality System are documented in revisions and amendments to the QMP. The QMP is reviewed annually to ensure that all information contained within is relevant and up-to-date. Any necessary QMP revisions will be made, and revisions will be submitted to the QAO. Five years from the date of approval of this QMP, the QAO or designee will undertake a complete review of the document and as appropriate, submit the revised QMP to EPA Quality Staff of the Office of Environmental Information or other oversight agency for review and approval as required.

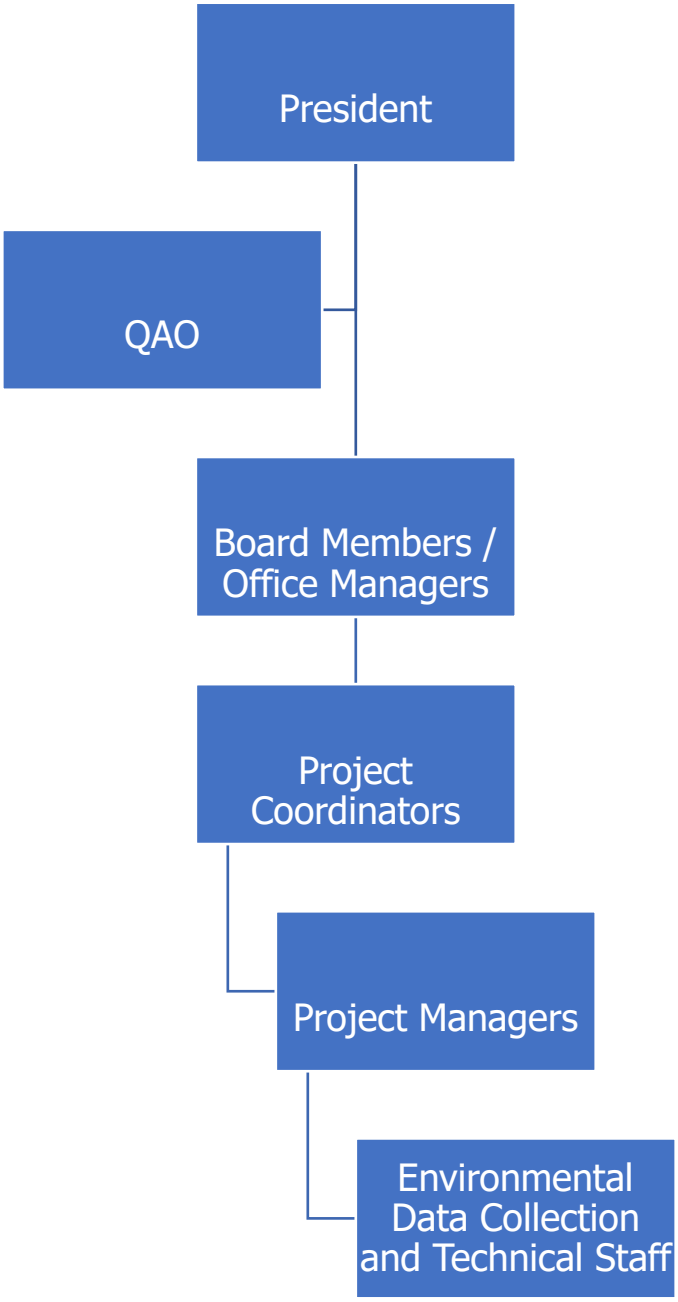



Figure 1 – Organizational Chart