WORK PLAN

CONTAINMENT AND PROCESSING BUILDING AND WASTE CONTAINMENT STORAGE PAD EVALUATION AND REPAIRS

MAX ENVIRONMENTAL TECHNOLOGIES, INC. YUKON FACILITY

Prepared For:

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CEC Project 170-822 Task 0710

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1.0 INTRODUCTION

This Work Plan (Work Plan) for MAX Environmental Technologies, Inc. (MAX) Containment and Processing Building (CAP Building) and Hazardous Waste Container Storage Pad Evaluation and Repairs has been prepared by Civil & Environmental Consultants, Inc. (CEC) (the project team). This Work Plan and the associated documents have been prepared by the project team on behalf of MAX (the Respondent) to the Administrative Order on Consent (AOC), executed April 26, 2024.

This Work Plan and the associated documents including the Quality Management Plan (QMP; Appendix F) and Inspection[(1)] Plan (IP; Appendix G), have been prepared by the project team in accordance with the requirements of the AOC. A description of the various components, regulatory criteria, and performance standards of the selected repairs are provided in this Work Plan. The project planning activities, additional inspections, and progress reporting to be conducted in support of the proposed evaluations and repairs are described below.

1.1 PURPOSE AND SCOPE

As stated in Paragraph 13 of the AOC, the general purpose for these work efforts is to:

1. Require Respondent to conduct the Work required in Section VIII (Work to be Performed) of the AOC, as well as any additional work determined to be necessary, to ensure compliance with Resource Conservation and Recovery Act (RCRA), supporting regulations and Commonwealth of Pennsylvania Hazardous Waste Storage and Treatment Permit No. PAD004835146; and
2. To ensure that the actions and timeframes for such actions are designed and implemented to protect public health and the environment now and in the future.

[(1)] The terms inspection and inspect, as used herein, is defined as follows: "An Engineer's inspection describes visual observations to compare a feature or structure to contract documents, applicable codes, standards, regulations, or ordinances. The Engineer will not be responsible for accepting or rejecting work, and, if necessary, for stopping work altogether. Additionally, the Engineer shall have no responsibility for site safety of other persons beyond CEC personnel at the site.

The requirements of other environmental regulations determined to be applicable or relevant and appropriate to the design and implementation of the remedy have been incorporated in this Work Plan. The Work Plan will be used as guidance to perform the repairs that are compliant with the applicable or relevant and appropriate requirements of the Pennsylvania Code Title 25 Chapter 264a (Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities) and the Code Federal Regulations (CFR) Title 40 Chapter I Subchapter I Part 264 (Standards for Owners and Operators Of Hazardous Waste Treatment, Storage, and Disposal Facilities).

1.2 IDENTIFIED ISSUES

The AOC identified a number of issues at the facility. Issues associated with the CAP Building and the waste container storage pads, for which CEC will observe and document repair efforts, are summarized below:

- Significant damage and deterioration to the exterior walls surrounding the door frames to bays were observed.
- Precipitation entering the CAP Building through the roof of Bay 4 and coming into contact with bulk, non-containerized, untreated hazardous waste was observed.
- Precipitation mixing with untreated hazardous waste and draining into a collection sump that conveys fluids to the Facility's wastewater treatment system was observed.
- Vehicles coming in contact with the waste in and outside the CAP Building, tracking the waste across the Facility between the CAP Building and the SWSS pits at the Facility was observed.
- A leachate leak detection tube at the northeast corner of the CAP Building was not accessible for monitoring because it was covered by backfill, and, as a result, Respondent was unable to properly monitor the leachate collection and removal system for leaks.
- Concrete secondary containment pad for Container Storage Area No. 2 had settled, causing liquid to accumulate in the southeast corner of the pad and not to drain properly towards the sump in the center of the secondary containment pad.

1.3 RELEVANT WORK TO BE PERFORMED

In response to the issues noted in Section 1.2 above, the AOC identified a number of "Work Efforts" to be completed at the facility. In an effort to respond in a timely and responsive manner, MAX has divided up the work efforts required by the AOC. Specifically, CEC has been tasked with observing and documenting the following generalized work efforts. More detailed descriptions for the Work Efforts to be performed for which CEC is observing and documenting are described in Table 1 of this Work Plan.

1. Necessary repairs (construction efforts to be performed by others) to the CAP Building to allow MAX to manage hazardous waste in the building as currently allowed in its hazardous waste management permit;
2. Evaluate the CAP building leak detection system/configuration; and
3. Evaluate several of the hazardous waste container storage pads currently existing at the site.

This Work Plan describes the activities to be completed in conducting the additional site inspections necessary to support and verify the effectiveness of the repairs. It also includes the project planning documents required for conducting these repairs and inspections. Proposed repairs, inspections, and description of the performance standards that apply to the repairs are also presented in this Work Plan.

1.4 ORGANIZATION

This Work Plan includes the following sections:

1.0 Introduction
2.0 Proposed Evaluations and Repairs
3.0 Design Team
4.0 Inspections
5.0 Project Schedule

6.0 Quality

7.0 Closing Remarks

This Work Plan also includes the following appendices:

Appendix A	Photographs of Existing Conditions
Appendix B	Relevant Containment Building Regulations
Appendix C	Relevant Container Storage Pad Regulations
Appendix D	Chart of Key Personnel
Appendix E	Project Schedule
Appendix F	Quality Management Plan
Appendix G	Inspection Plan

2.0 PROPOSED EVALUATIONS AND REPAIRS

The proposed evaluations and repairs are intended to meet the performance standards set forth in the regulations.

2.1 DESCRIPTION OF THE PROPOSED EVALUATIONS AND REPAIRS

The major components of the proposed remedial measures are as follows:

1. Perform repairs to the building necessary to meet applicable regulations and to allow MAX to manage hazardous waste as authorized in its hazardous waste permit;
2. Evaluate the leachate detection observation port associated with the CAP Building;
3. Evaluate the structural integrity of the CAP Building;
4. Evaluate the condition of several previously permitted hazardous waste container storage pads and propose remedial measures that would be necessary to bring the pads back into hazardous waste container storage service; and

2.2 PERFORMANCE STANDARDS

The proposed repairs will be performed to meet the performance standards and specifications identified below. Alternative standards or requirements may be approved if it can be demonstrated that the alternative design is at least equivalent in performance.

2.1.1 CAP Building Repairs

The CAP Building repairs will be performed to comply with Title 40 of the Code of Federal Regulations (CFR) 264.1101 Design and Operating Standards for Containment Buildings. A copy of the applicable regulations is included in Appendix B. Relevant regulations that affect the repairs are included in Table 2.

In accordance with CFR § 264.1101(a)(1), the repairs to be made to the CAP Building will be done to so that the building is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements (e.g., precipitation, wind, run-on), and to assure containment of managed wastes. The repairs are intended to make the building shell to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released. MAX's contractor, Cavcon, has completed repair of the damaged exterior walls of Bay 1s and 2. See attached photographs.

CEC will also perform a structural inspection of the building. Specifically, CEC will inspect the floors of each bay, interior back wall, and main support beams to determine if the building remains structurally sound (based on visual observations from the ground level) or if additional repairs are needed.

Additionally, in accordance with CFR § 264.1101(c)(3)(iii), at the completion of the report, CEC will prepare a Report, sealed by a registered professional engineer, for the repairs that have been completed. The report will also identify if other repairs are deemed necessary by CEC in order for MAX to manage hazardous waste as authorized by its hazardous waste management permit.

2.1.2 Evaluation of the Cap Building Leak Detection

The evaluation CAP Building Leak Detection configuration will be performed to comply with 40 CFR § 264.1101 Design and Operating Standards for Containment Buildings. A copy of the applicable regulations is included in Appendix B. Relevant regulations that affect the repairs are included in Table 2.

More specifically, in accordance with CFR § 264.1101(b)(3), the leak detection will be evaluated to for evidence that the leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

2.1.3 Evaluation and Remediation of Container Storage Pads

Several existing, previously permitted hazardous waste container storage pads exist at the facility today. As noted in the AOC, one of these pads appeared to not properly drain stormwater. As such, in accordance with 40 CFR § 264.175, CEC intends to observe and delineate areas that hold stormwater water and make recommendations as to how to prevent liquid accumulation in the storage pad if MAX proposes to return the pad (aka Container Area 2) to hazardous waste container storage service. CEC will also evaluate the general condition of the remaining container storage areas (Areas 3 and 4) to determine their compliance with the above noted regulation. A copy of the applicable regulations is included in Appendix C. Relevant regulations that affect the repairs are included in Table 2.

3.0 DESIGN TEAM

The repair work will be observed and documented by Civil & Environmental Consultants, Inc. (CEC). Mr. Eric Chiado, P.E., will serve as the Project QA Officer and Timothy Mitchell, P.E. will serve as the Project Manager for the CEC team. Having previously worked on a number of different tasks at MAX's facilities (CAP Building Certification, Landfill No. 6 Permitting, Impoundments 1, 2, and 3 Closure, etc.), CEC personnel are familiar with the various aspects of the site and with this particular project.

CEC will be responsible for observing and documenting the following repair activities:

- CAP Building Repairs;
- Development and tracking of project schedules;
- Preparation of this Work Plan;
- Preparation of the QMP and IP (included with this Work Plan);
- Coordination of the development of regulatory criteria;
- Conducting the Site Inspections; and
- Assisting the designated project coordinator with preparation of monthly project status reports to U.S. Environmental Protection Agency (EPA) and for scheduling and coordination of meetings and interactions with EPA and Pennsylvania Department of Environmental Protection (DEP).

A Chart of Key Personnel is presented in Appendix D for the project team that will implement the repair work, specific personnel to be involved with the repairs, and the generalized lines of communication and responsibility.

4.0 INSPECTIONS

Most of the site issues were identified as part of EPA and DEP site investigations, and as outlined in the AOC. Pre-work Site Inspections performed on May 12, 2024, May 31, 2024, and June 20, 2024. Photographs of existing conditions from the Site Inspections are provided in Appendix A. Planned Inspections are detailed in the Inspection Plan included as Appendix G of this Work Plan and summarized below.

1. CAP Building Structural Inspections. Following approval of this Work Plan, the following inspections will be performed:
   a. *Pre-Work Inspection:* a more detailed survey will be conducted to identify if there are any defective areas in the portions of the building.
   b. *Post-Work Inspections:* an inspection will be performed following planned repairs of the CAP building to determine if the Containment Building regulations are met.

2. Leak Detection Inspection. The leak detection for the CAP Building will be inspected to determine if it is operating as intended. Refer to the Inspection Plan (Appendix G) for more detailed information regarding the Leak Detection Inspection.

3. Inspection of the Hazardous Waste Container Storage Pads. Container storage pads will be inspected for areas where stormwater has pooled. Areas will be delineated and recommendations for repairs will be relayed to MAX. MAX may opt to take the hazardous waste storage pads out of service until repairs can be made at some point into the future. Storage pads will not be put back into service until written notification submitted and approved by the EPA and DEP.

5.0 PROJECT SCHEDULE FOR REMEDIAL DESIGN

The date and timelines of various evaluation and repair related activities/work are shown in the project schedule included in Appendix E and are narratively described below.

- Executed AOC
  - April
- Professional Engineer Selection (AOC Paragraph 47)
  - Completed
- Prepare Quality Management Plan (AOC Paragraph 48)
  - Submitted as Appendix F of this submittal
- MAX to Retain Professional Engineer (AOC Paragraph 50)
  - Completed
- Prepare Inspection Plan (AOC Paragraph 51)
  - Submitted as Appendix G of this submittal
- Prepare Work Plan (AOC Paragraph 52)
  - This submittal
- EPA/DEP Review of Work Plan
  - Assumed to be 30 days following Work Plan submission
- Completion of Repairs (AOC Paragraph 53)
  - To be completed within 120 following EPA approval of the Work Plan

6.0 QUALITY

A Quality Management Plan (QMP) was prepared by CEC in accordance with guidance from the EPA presented in Requirements for Quality management Plans (EPA RDF/R-2) (EPA/240/B-01/002, March 2001). This QMP documents how CEC plans, implements, and assesses the effectiveness of its Quality Assurance (QA) and quality control (QC) operations for environmental programs. Our QMP supplements the policies established by CEC's Corporate Quality Assurance Program (QAP) by focusing additional attention on aspects of the QA activities that impact environmental projects and programs. The purpose of CEC's QAP is to establish the quality management processes and structures for assuring that CEC's services achieve the expected quality for their intended use.

This QMP establishes CEC's organization-wide quality system for achieving CEC's corporate QA objectives when performing activities supporting environmental data collection and other environmental programs including:

- The roles, responsibilities and authorities of CEC personnel;
- The policies and procedures to be employed to ensure that work processes and services satisfy stated expectations or specifications; and
- The policies and procedures for implementing and assessing the effectiveness of CEC's quality system.

The QMP is the umbrella document under which environmental projects are performed. It is also the document under which project-specific Quality Assurance Project Plans (QAPP) are developed. CEC will follow this QMP during the CAP Building and Hazardous Waste Container Storage Pad Evaluation and Repairs. The QMP is included in Appendix F of this submittal.

7.0 CLOSING REMARKS

We trust this Work Plan and supporting data are sufficient for your needs at this time. The services provided for this project were performed with the care and skill ordinarily exercised by reputable members of the profession practicing under similar conditions at the same time and the same or similar locality. No warranty, expressed or implied, is made or intended by rendition of these consulting services or by furnishing oral or written reports of the findings made. This Work Plan has been prepared for exclusive use by MAX.

TABLES

TABLE 1

RELEVANT WORK TO BE PERFORMED ITEMS IDENTIFIED IN AOC AND STATUS

CONTAINMENT AND PROCESSING BUILDING AND WASTE CONTAINER STORAGE PAD EVALUATION AND REPAIRS

AOC PARAGRAPH	WORK TO BE PERFORMED	STATUS
47	Professional Engineer and Contractor Selection. Respondent shall retain a Professional Engineer, and one or more qualified environmental contractors or consultants, to perform the Work and Respondent shall, within ten (10) calendar days after the Effective Date of this Consent Order, notify the EPA of the name(s), title(s), and qualifications of such contractor(s) or consultant(s). Respondent shall also notify the EPA of the name(s), title(s), and qualification(s) of any Professional Engineer and contractor(s) or subcontractor(s) retained to perform the Work at least seven (7) calendar days prior to commencement of such Work.	Completed
48	With respect to any proposed environmental contractor or consultant, Respondent shall demonstrate that the proposed contractor maintains compliance with ASQ/ANSI E4:2014 "Quality management systems for environmental information and technology programs - Requirements with guidance for use" (American Society for Quality, February 2014), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The QMP shall be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, Mar. 2001, reissued May 2006) or equivalent documentation as determined by the EPA. The qualifications of the persons undertaking the Work for Respondents shall be subject to the EPA review for verification that such persons meet objective assessment criteria (e.g., experience, capacity, technical expertise) and do not have a conflict of interest with respect to the project.	Appendix F of this Work Plan
50	Within fifteen (15) days of the Effective Date of this Consent Order, Respondent shall retain a professional engineer to perform a structural and mechanical evaluation of the CAP building at the Facility, in addition to all secondary hazardous waste containment pads for the permitted hazardous waste storage areas at the Facility.	Completed

TABLE 1

RELEVANT WORK TO BE PERFORMED ITEMS IDENTIFIED IN AOC AND STATUS

CONTAINMENT AND PROCESSING BUILDING AND WASTE CONTAINER STORAGE PAD EVALUATION AND REPAIRS

AOC PARAGRAPH	WORK TO BE PERFORMED	STATUS
51	Within sixty (60) days of the Effective Date of this Consent Order, Respondent shall submit to EPA, for review and approval, the professional engineer's inspection plan to perform a structural evaluation of the CAP Building at the Facility and all secondary hazardous waste containment pads for the permitted hazardous waste storage areas located at the Facility. EPA shall coordinate the review of the Plan with PADEP.	Appendix G of this Work Plan
52	Within sixty (60) days of the Effective Date of this Consent Order, Respondent shall submit to EPA, for review and approval, the professional engineer's work plan(s) to repair or modify the CAP Building at the Facility to meet RCRA Subtitle C's Containment Building requirements (i.e., to be completely enclosed), to repair, if necessary, the CAP Building leachate collection system, and to modify or repair any and all secondary hazardous waste containment pads for the permitted hazardous waste storage areas at the Facility used for the storage of hazardous waste to prevent the tracking/ release of such waste into the environment. EPA shall coordinate the review of the Plan with PADEP.	This Submittal
53	Within one hundred and twenty (120) days of EPA's approval (Section X. EPA Approvals) of the professional engineer's work plan(s), Respondent shall complete the necessary repairs or modifications in accordance with such approved work plan(s) for the CAP Building at the Facility, and the CAP Building leachate collections system at the Facility, and the secondary hazardous waste containment pads at the Facility.	To be completed following EPA approval of Work Plan

TABLE 2

PROPOSED REPAIR REGULATORY CRITERIA

CONTAINMENT AND PROCESSING BUILDING AND WASTE CONTAINER STORAGE PAD EVALUATION AND REPAIRS

PARAMETER OR CRITERIA	DESIGN BASIS	DESIGN CRITERIA
CONTAINMENT BUILDING		
Enclosure Requirements	40 CFR § 264.1101(a)(1)	The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.
Structural soundness	40 CFR 264.1101(a)(2)	The building must have sufficient structural strength to prevent collapse or other failure.
CONTAINMENT BUILDING LEAK DETECTION		
Leak Detection Requirements	40 CFR 264.1101(b)(3)	A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.
STORAGE PAD		
Containment	40 CFR § 264.175(b)(2)	The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

FIGURES

NORTH

E 8200
E 8300
E 8400
E 8500
E 8600
E 8700

N 9800
N 9700
N 9600
N 9500

NORTHERN GABION BASKET RETAINING WALL

NORTH WALL

BAY 4

ELECTRICAL ROOM

WEST WALL

MIXING BUILDING

BAY 3

EAST WALL

BAY 2

BAY 1

SOUTH WALL

SOUTHERN GABION BASKET RETAINING WALL

NOMINAL FINISHED EL. 1060

UPPER ELEVATION CONCRETE APRON

1020
1030
1040
1050
1060

1025.2
1020.5
1030.1
1059.1
1062.6
1063.7
1061.6
1061.0
1062.8
1017.8

RWS
PARKING
RW

REVISION RECORD

NO	DATE	DESCRIPTION
1		
2		
3		
4		

SUBMITTAL RECORD

NO	DATE	DESCRIPTION

NOTES:

1. BUILDING LOCATION BASED ON DRAWING NUMBER 9076-F01, PREPARED BY ORBITAL ENGINEERING, INC., DATED AUGUST 30, 2006, LAST REVISED JULY 10, 2007.

SCALE IN FEET
0 20 40

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DRAWN BY:	SCC	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT
DATE:	JUNE 2024	DWG SCALE:	1"=20'	PROJECT NO:	170-822

CAP BUILDING AREAS

DRAWING NO.: 1

APPENDIX A

PHOTOGRAPHS OF EXISTING CONDITIONS

PHOTOGRAPHS OF "PRE-WORK CONDITIONS"

PHOTOGRAPH NO. 1
View of rusting structural components of the CAP Building.

PHOTOGRAPH NO. 2
View of rust on roof of CAP Building.

PHOTOGRAPHS OF "PRE-WORK CONDITIONS"

PHOTOGRAPH NO. 3
View of interior wall and floors of the CAP Building.

PHOTOGRAPH NO. 4
View of open storage bay.

PHOTOGRAPHS OF "PRE-WORK CONDITIONS"

PHOTOGRAPH NO. 5
Alternate view of open storage area in the CAP Building.

PHOTOGRAPH NO. 6
View of leak detection area for the Cap Building.

PHOTOGRAPHS OF "PRE-WORK CONDITIONS"

PHOTOGRAPH NO. 7
View of Hazardous Waste Storage Pad.

PHOTOGRAPH NO. 8
View of Containment Building repairs completed at the time of submittal.

PHOTOGRAPHS OF "PRE-WORK CONDITIONS"

PHOTOGRAPH NO. 9
View of Containment Building repairs completed at the time of submittal.

APPENDIX B

RELEVANT CONTAINMENT BUILDING REGULATIONS

Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter I —Solid Wastes
Part 264 —Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
Subpart DD —Containment Buildings

Source: 57 FR 37265, Aug. 18, 1992, unless otherwise noted.
Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6939g.
Source: 45 FR 33221, May 19, 1980, unless otherwise noted.

§ 264.1101 Design and operating standards.

(a) All containment buildings must comply with the following design standards:

(1) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

(2) The floor and containment walls of the unit, including the secondary containment system if required under paragraph (b) of this section, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. EPA will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this paragraph. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:

(i) They provide an effective barrier against fugitive dust emissions under paragraph (c)(1)(iv); and

(ii) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(3) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

(4) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

(b) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:

(1) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface).

(2) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building:

(i) The primary barrier must be sloped to drain liquids to the associated collection system; and

(ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time.

(3) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(i) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

(A) Constructed with a bottom slope of 1 percent or more; and

(B) Constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m^2/sec or more.

(ii) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(iii) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of § 264.193(e)(1). In addition, the containment building must meet the requirements of § 264.193(b) and §§ 264.193(c) (1) and (2) to be considered an acceptable secondary containment system for a tank.)

(4) For existing units other than 90-day generator units, the Regional Administrator may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this subpart. In making this demonstration, the owner or operator must:

(i) Provide written notice to the Regional Administrator of their request by November 16, 1992. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(ii) Respond to any comments from the Regional Administrator on these plans within 30 days; and

(iii) Fulfill the terms of the revised plans, if such plans are approved by the Regional Administrator.

(c) Owners or operators of all containment buildings must:

(1) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(i) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(ii) Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

(iii) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(iv) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see 40 CFR part 60, appendix A, Method 22—Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices (see 40 CFR part 60 subpart 292 for guidance). This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

(2) Obtain and keep on-site a certification by a qualified Professional Engineer that the containment building design meets the requirements of paragraphs (a), (b), and (c) of this section.

(3) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures.

(i) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

(A) Enter a record of the discovery in the facility operating record;

(B) Immediately remove the portion of the containment building affected by the condition from service;

(C) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

(D) Within 7 days after the discovery of the condition, notify the Regional Administrator of the condition, and within 14 working days, provide a written notice to the Regional Administrator with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(ii) The Regional Administrator will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(iii) Upon completing all repairs and cleanup the owner or operator must notify the Regional Administrator in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with paragraph (c)(3)(i)(D) of this section.

(4) Inspect and record in the facility operating record, at least once every seven days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(d) For a containment building that contains both areas with and without secondary containment, the owner or operator must:

(1) Design and operate each area in accordance with the requirements enumerated in paragraphs (a) through (c) of this section;

(2) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

(3) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(e) Notwithstanding any other provision of this subpart the Regional Administrator may waive requirements for secondary containment for a permitted containment building where the owner operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

[57 FR 37265, Aug. 18, 1992, as amended at 71 FR 16907, Apr. 4, 2006; 71 FR 40274, July 14, 2006; 81 FR 85826, Nov. 28, 2016]

APPENDIX C

RELEVANT WASTE STORAGE PAD REGULATIONS

Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter I —Solid Wastes
Part 264 —Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
Subpart I —Use and Management of Containers

Source: 46 FR 2866, Jan. 12, 1981, unless otherwise noted.
Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6939g.
Source: 45 FR 33221, May 19, 1980, unless otherwise noted.

§ 264.175 Containment.

(a) Container storage areas must have a containment system that is designed and operated in accordance with paragraph (b) of this section, except as otherwise provided by paragraph (c) of this section.

(b) A containment system must be designed and operated as follows:

(1) A base must underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

(2) The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

(3) The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

(4) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in paragraph (b)(3) of this section to contain any run-on which might enter the system; and

(5) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

[*Comment:* If the collected material is a hazardous waste under part 261 of this Chapter, it must be managed as a hazardous waste in accordance with all applicable requirements of parts 262 through 266 of this chapter. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Clean Water Act, as amended.]

(c) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by paragraph (b) of this section, except as provided by paragraph (d) of this section or provided that:

(1) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or

(2) The containers are elevated or are otherwise protected from contact with accumulated liquid.

(d) Storage areas that store containers holding the wastes listed below that do not contain free liquids must have a containment system defined by paragraph (b) of this section:

(1) FO20, FO21, FO22, FO23, FO26, and FO27.

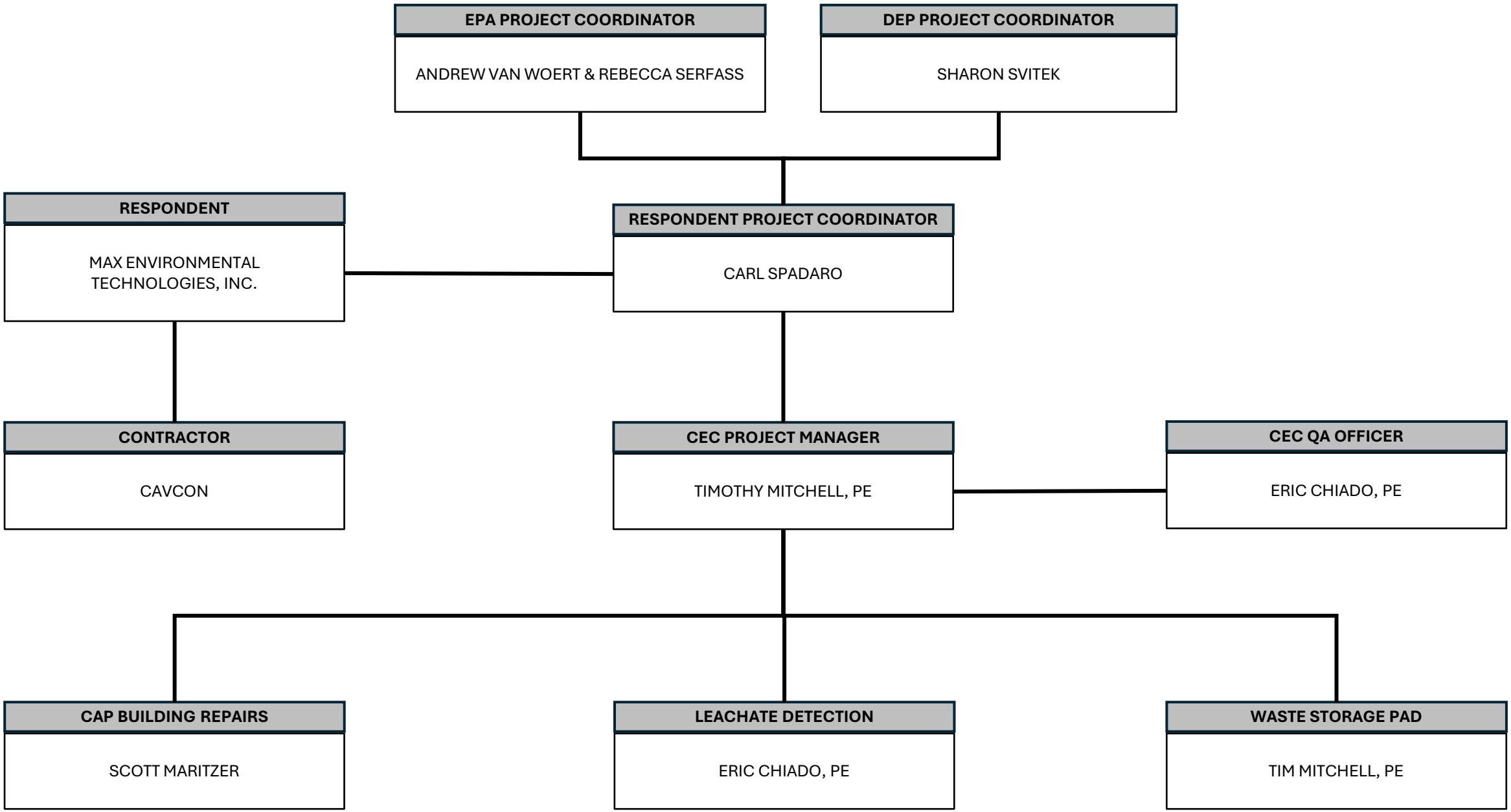
(2) [Reserved]

[46 FR 55112, Nov. 6, 1981, as amended at 50 FR 2003, Jan. 14, 1985; 71 FR 40273, July 14, 2006]

APPENDIX D

CHART OF KEY PERSONNEL

CHART OF KEY PERSONNEL



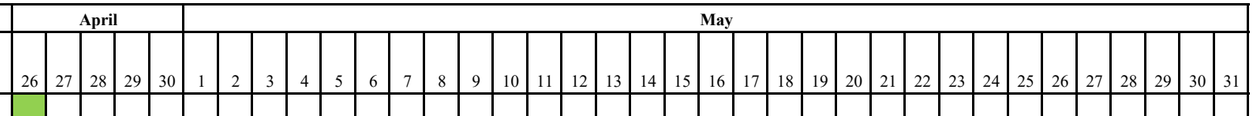
APPENDIX E

PROJECT SCHEDULE

PROJECT SCHEDULE

CONTAINMENT AND PROCESSING BUILDING AND WASTE STORAGE PAD EVALUATION AND REPAIRS

Paragraph No.	Item	Start Date	Calendar Days	Date Due	Status
	Administrative Order of Consent Executed	4/26/2024	NA	4/26/2024	Complete
47	Professional Engineer Selection	4/26/2024	10	5/6/2024	Complete
48	Quality Management Plan	NA	NA	NA	In Progress
50	MAX to Retain Professional Engineer	4/26/2024	15	5/11/2024	Complete
51	Inspection Plan	4/26/2024	60	6/25/2024	This submittal
52	Work Plan	4/26/2024	60	6/25/2024	This submittal
	EPA/PADEP Review of Work Plan	6/26/2024	30	7/26/2024	Pending
53	Completion of Repairs	7/26/2024	120	11/23/2024	Pending



Notes:
1. CEC assumes a 30-day EPA and DEP review period for the Work Plan and Inspection Plan submittals; dates may be adjusted based on actual review times.
2. Time requirements associated with completing the building repairs will begin following EPA approval of the Work Plan.

PROJECT SCHEDULE

CONTAINMENT AND PROCESSING BUILDING AND WASTE STORAGE PAD EVALUATION AND REPAIRS

Paragraph No.	Item	Start Date	Calendar Days	Date Due	Status	June 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Administrative Order of Consent Executed	4/26/2024	NA	4/26/2024	Complete																														
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53	Completion of Repairs	7/26/2024	120	11/23/2024	Pending																														

Notes:
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2. Time requirements associated with completing the building repairs will begin following EPA approval of the Wo

PROJECT SCHEDULE

CONTAINMENT AND PROCESSING BUILDING AND WASTE STORAGE PAD EVALUATION AND REPAIRS

Paragraph No.	Item	Start Date	Calendar Days	Date Due	Status	July 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Administrative Order of Consent Executed	4/26/2024	NA	4/26/2024	Complete																															
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PROJECT SCHEDULE

CONTAINMENT AND PROCESSING BUILDING AND WASTE STORAGE PAD EVALUATION AND REPAIRS

						August																											
Paragraph No.	**Item**	**Start Date**	**Calendar Days**	**Date Due**	**Status**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
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						September																										
Paragraph No.	**Item**	**Start Date**	**Calendar Days**	**Date Due**	**Status**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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						October																											
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PROJECT SCHEDULE

CONTAINMENT AND PROCESSING BUILDING AND WASTE STORAGE PAD EVALUATION AND REPAIRS

						November																												
Paragraph No.	**Item**	**Start Date**	**Calendar Days**	**Date Due**	**Status**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
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APPENDIX F

QUALITY MANAGEMENT PLAN

QUALITY MANAGEMENT PLAN

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

APRIL 2024

Civil & Environmental Consultants, Inc.

Pittsburgh 700 Cherrington Parkway | Moon Township, PA 15108 | p: 412-429-2324 f: 412-429-2114 | www.cecinc.com

QUALITY MANAGEMENT PLAN

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Approval:

Signature: _____ Date: 04/18/24

Name: Harry Dravecky

Title: Chief Operating Officer/Corporate Quality Manager

TABLE OF CONTENTS

1.0 INTRODUCTION

This Quality Management Plan (QMP) was prepared by Civil & Environmental Consultants, Inc. (CEC or firm) in accordance with guidance from the United States Environmental Protection Agency (USEPA) presented in Requirements for Quality management Plans (EPA RDF/R-2) (EPA/240/B-01/002, March 2001). This QMP documents how CEC plans, implements, and assesses the effectiveness of its Quality Assurance (QA) and quality control (QC) operations for environmental programs. Our QMP supplements the policies established by CEC's Corporate Quality Assurance Program (QAP) by focusing additional attention on aspects of the QA activities that impact environmental projects and programs. The purpose of CEC's QAP is to establish the quality management processes and structures for assuring that CEC's services achieve the expected quality for their intended use.

This QMP establishes CEC's organization-wide quality system for achieving CEC's corporate QA objectives when performing activities supporting environmental data collection and other environmental programs including:

- The roles, responsibilities and authorities of CEC personnel;
- The policies and procedures to be employed to ensure that work processes, and services satisfy stated expectations or specifications; and
- The policies and procedures for implementing and assessing the effectiveness of CEC's quality system.

The QMP is the umbrella document under which environmental projects are performed. It is also the document under which project-specific Quality Assurance Project Plans (QAPP) are developed.

This QMP supports and strengthens CEC's commitment to quality management principles and practices established in CEC's QAP and contains the following elements:

- Management and Organization

- Quality System Description
- Personnel Qualifications and Training
- Procurement of Items and Services
- Documentation and Records
- Computer Hardware and Software
- Planning
- Implementation of Work Processes
- Assessment and Responses
- Quality Improvement

Each of these elements are expanded upon in the individual QMP sections that follow.

2.0 MANAGEMENT AND ORGANIZATION

2.1 CORPORATE QUALITY ASSURANCE POLICY

2.1.1 CEC Policy on Quality Assurance (QA)

CEC, as an employee-owned consulting firm that was established to provide high quality, professional engineering, science, and related services to private and public clients. For CEC, high quality services not only means the technical excellence of our services and deliverables, but also that our service and deliverables are provided on schedule and within the established budget. The other components of high quality service include our attention to ethics, safety, and loss prevention. In order to achieve the goal of providing high quality service, CEC developed and maintains a QAP that addresses the various aspects of its professional, technical and support activities. It is the objective of the QAP program to maintain the quality of all company activities, particularly service to clients, at a consistently high level.

With regard to environmental programs, environmental data are a critical component of the decisions we make while advising our clients regarding the management and reduction of environmental risk. Therefore, it is of critical importance that the quality of the environmental data used in these decisions is defensible and reliable. This QMP provides added focus to QA activities CEC implements when providing environmental services.

Elements of a quality CEC project are demonstrated in a project that:

- Is technically correct;
- Achieves the client's objectives;
- Is completed on time and on budget;
- Is safe for CEC employees, the client, and the public; and
- Does not conflict with professional ethics or public welfare.

Quality service is a foundation of CEC's corporate principles. To that end, services will be offered only when properly educated and managed staff are available to meet clients' technical requirements, time schedule, and budget.

Providing high quality services is critical to CEC's long-term success because not providing high quality services will lead to client dissatisfaction, inefficiencies correcting work, and project delays and budget overruns. Poor quality projects also increase the potential for claims and litigation that not only have high legal costs, but also divert management and staff from their primary roles of serving clients. Poor quality projects can also increase safety risks to the public and CEC employees. Additionally, the quality of our services is an important factor in attracting new clients and is often the most important factor in assuring that existing clients return for additional work. The quality of our business practices also affects our ability to attract and retain employees. High quality and motivated employees want to deliver a high quality services.

2.1.2 Purpose of the QAP

The purpose of CEC's QAP is to define an integrated program for technical quality and consistency in services and deliverables provided by CEC. The components of the program include:

- A set of quality procedures that reflect the internal company workings;
- Staff familiar with their responsibilities, as well as the objectives and procedures of the QAP;
- Specified procedures for operating the program;
- Methods to document the QA activities; and
- Activities to audit the program and correct identified deficiencies.

Quality Policies were developed based on the QAP to provide practical guidance to CEC employees on how to reliably provide high quality services. The Quality Policies address four aspects of CEC's services including:

- Project Management
- Records and Communications
- Work Procedures and Equipment
- Documents and Drawings

Those Quality Policies are an integral part of CEC's quality management system (QMS).

The services provided by CEC cover many disciplines, and the organization must be able to respond to the varying needs of its clients. Therefore, the QAP was not developed to specify all methods of professional practice, but rather provides a framework for achieving the objective of providing high quality technical services by formalizing QA procedures. Project-specific quality assurance project plans (QAPPs) may be required for individual projects where more detailed specification of investigative and analytical techniques, documentation, and auditing of project activities is required.

2.1.3 Purpose of the QMP

The purpose of this QMP is to supplement CEC's Corporate QAP with quality activities that focus on the unique aspects of environmental programs and projects. Because this QMP is a stand-alone document, it fully incorporates the policies and procedures of the QAP so that the user does not need to separately reference the QAP.

2.1.4 QA Resource Allocation

Resources are allocated for QA activities at both the corporate and project levels. At the corporate level, resources are allocated to address two aspects of performance:

- Technical quality by the Practices with oversight by the Corporate Practice Leads (CPL) and the Chief Technical Officer (CTO)
- Performance quality with oversight by the Office Leads, Operations Vice Presidents, and the Chief Operating Officer (COO)

The Practices allocate resources to establish procedures for all technical aspects of services. The Practices then perform practice peer reviews (PPRs) of individual office practices to assess each office's conformance with technical aspects of their services and the quality oversight and review of those services. The results of the PPRs are shared with office and corporate leadership, and if necessary, correction action plans are developed to address concerns. The overall PPR program is overseen by the CTO.

Resources are also allocated to implement reviews of project performance quality by corporate leaders. Those reviews focus on performance of projects in accordance with the established budgets and schedules. Internal Peer Reviews (IPRs) are performed on all CEC offices to assess all aspects of their operations, including conformance with CEC's QAP and other quality policies. Concerns identified are incorporated into correction action plans as needed.

QA resources are also allocated for each project performed by CEC. Each project must have the following personnel, at a minimum, to ensure proper execution of the project and delivery of high-quality work services:

- A Principal-in-Charge (Principal) who is ultimately responsible for all aspects of the project.
- A qualified Project Manager who is responsible to the assigned Principal for completion and management of the project.
- A Project Quality Manager who is responsible for confirming that all appropriate QA activities are implemented and documented in accordance with company policy.

Each project budget includes costs to perform the QA activities in accordance with the expected level of QA required by the project. All projects are set up with a QA Task to which review and QA time is to be charged. Charges to the QA Task will be monitored by various levels of management as an indicator of conformance with CEC's quality processes.

2.2 QA ORGANIZATION AND AUTHORITY

2.2.1 Corporate QA Organization

The overall responsibility for QA is held by the President/CEO of CEC. Although the President/CEO has the ultimate responsibility for CEC's QA program, the day-to-day QA activities are led by the COO. The COO is CEC's Corporate Quality Manager. The duties of the Corporate QA Manager/COO include the coordinating of company QA activities, monitoring the company's quality performance, maintaining and updating the QAP as needed, and advising Office Leads and Practice Leads on CEC quality programs.

A CPL is assigned to each of the company's Practices to coordinate technical activities and knowledge transfer across the firm. A primary responsibility of a CPL is to implement activities that result in the consistent provision of high-quality services by the Practice being led. As described in Section 2.1.4, the CPLs are also responsible for developing and implementing a PPR program for their practice.

2.2.2 Office QA Organization

At the office level, the overall responsibility for QA is held by the Office Lead. The QA duties of the Office Lead includes assuring that every project has a Project Quality Manager and that the CEC QAP and QMP are implemented within the office. An Office Practice Lead is assigned for each practice area available in an office. This individual will coordinate with the Office Lead and CPL to implement procedures that result in high quality services being provided by that practice area within the individual office.

2.2.3 Project QA Organization

The project management structure (Principal, Project Manager, Project Quality Manager), as described in Section 2.1.4, is intended to provide each project with management having the skills, experience, and judgment necessary to not only implement the QMP, but also identify and manage

the complexities of each project. These individuals must comply with the established QAP/QMP and remain vigilant in their monitoring for potential problems. In the event of difficult issues, this team may turn to Office Leads, CPLs, and senior corporate management for assistance and guidance.

The review and revision/correction of all documents, drawings, analytical data tables and calculations prepared by CEC is an essential part of the process of providing quality services to our clients. The responsibility for ensuring these reviews occur is the responsibility of the Project Quality Manager assigned for each project. It is CEC's policy that at least one Senior Project Manager, Principal, or Officer who understands the general/technical requirements of the project as well as any client-specific requirements (where applicable) needs to serve as the Project Quality Manager to oversee the review of the project documents and general adherence to the applicable Quality Policies. In some instances, the project Principal will serve as the Project Quality Manager, but another CEC employee with the technical knowledge, understanding of client-specific requirements, and/or experience appropriate to the project is preferrable. To assure that the quality process is independent of scope execution and to avoid potentially conflicting issues, the Project Quality Manager is not permitted to be the assigned Project Manager. In no case shall the primary author of any document (e.g. reports, drawings, data tables, etc.) be designated as either the technical reviewer or Project Quality Manager.

The Project Quality Manager does not personally have to perform a detailed technical review of the project materials/deliverables. It is the responsibility of the Project Quality Manager to confirm that proposals, reports, calculations, drawings, tables and other pertinent project materials/deliverables have been properly reviewed and checked by qualified individuals, and the project deliverables are consistent with the requirements of both CEC and the client. The Project Quality Manager may designate other reviewers to address specific technical issues. Multi-disciplinary or multi-office projects typically require discipline- and/or office-specific reviewers for their respective portion(s) of the project. The responsibility of the Project Quality Manager is to make sure the required reviews have been completed. The Project Quality Manager shall also conduct a periodic review of the project file to confirm that proper reviews have been conducted, and if they have not, to correct such oversights for future projects.

2.2.4 QA Organization Chart

The organization structure and chain of responsibility for QA activities is presented in the QA Organizational Chart, Exhibit 1.

2.2.5 Internal Coordination

Updates to the QAP, QMP and CEC's Quality Policies will be distributed throughout CEC by the COO/Corporate Quality Manager. Information on CEC quality programs is provided to Office Leads and CPLs who are then responsible to distribute the information to Office Practice Leads. Office Practice Leads work with Project Quality Managers within their practice to ensure adherence to CEC's QAP and QMP.

CEC's Quality Policies are issued to all employees of CEC, who are expected to read and understand the policies as applicable to their job responsibilities. All employees have a key role in CEC's overall quality program and are expected to understand their responsibilities in accordance with CEC's QAP. Employees are issued copies of all modifications to quality policies as they occur.

2.3 APPLICABILITY OF QUALITY ASSURANCE PROGRAM

All aspects of CEC's services require QA activities performed in accordance with the QAP and QMP. The QMP is particularly applicable to environmental data operations. QA functions are carried out by personnel throughout the CEC who, pursuant to the provisions contained in the QAP and QMP, are fully informed of, and trained in, their quality-related responsibilities. The quality standards promulgated by CEC – including the QMP, QAPPs, and Standard Operating Procedures (SOPs) – are applied as appropriate.

Further, CEC routinely engages subcontractors and subconsultants (i.e., contractors, consultants, drilling firms, testing laboratories, etc.) (collectively "subcontractors") in the performance of work for our clients. Every subcontractor engaged by CEC must have a complete and properly executed

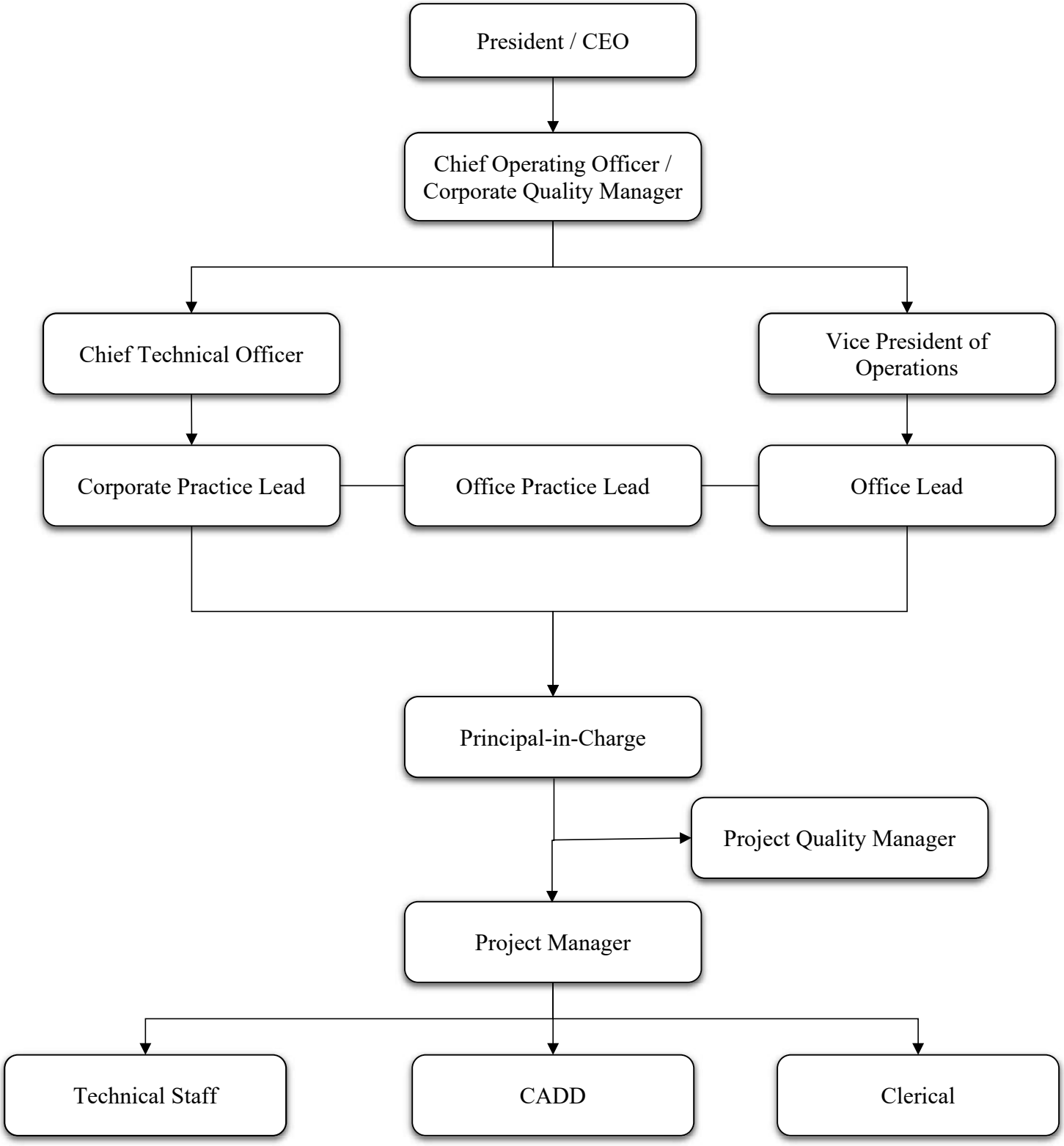

Exhibit 1 – Quality Assurance Organization Chart

subcontractor agreement in place prior to the initiation of services. Proper contract management with those subcontractors is critical to project success and to protect CEC and its projects.

2.4 COMMUNICATION AND IMPLEMENTATION

CEC ensures that the quality system is understood and effectively implemented through program and project planning activities, the implementation of organizational and project-specific management controls, and employee training programs. Specifically, ongoing training is performed to familiarize all employees with CEC's Quality Policies. These activities, programs, and controls are described in this QMP as indicated below:

- Program/project planning activities and organizational and project-specific management controls: **Sections 2, 4, 5, 6, 7, 8**;
- Employee training: **Sections 3 and 4**;
- Assessment and response: **Section 10**; and
- Quality improvement: **Section 11**.

3.0 QUALITY MANAGEMENT SYSTEM COMPONENTS

3.1 QUALITY SYSTEM COMPONENTS

CEC's quality system is documented in the QAP, this QMP, Quality Policies, and in the program plans for the components and tools of the quality system identified in this section. The majority of the quality program documents are available on CEC's intranet site where it is accessible by all CEC employees. A description of the components is presented in the subsections that follow.

3.1.1 Quality Policies

Quality Policies were developed by CEC to provide practical guidance to CEC employees for typical activities that they perform. The Quality Policies provide procedures to be used to satisfy the QA requirements for services and activities performed by employees.

3.1.2 Standard Operating Procedures

CEC has developed SOPs for several aspects of service offerings to help ensure the quality of those services. Those SOPs include:

- SOPs for environmental investigations and sampling
- SOPs for receipt of electronic data from environmental laboratories
- SOPs for preparation of electronic drawings (CADD Standards)
- SOPs for geographic information system applications.

By following those SOPs, the risk of poor quality services is mitigated by applying proven techniques and procedures to those activities.

3.1.3 Continuous Reviews and Planning

CEC's quality systems are reviewed continuously and updated on a timely basis to respond to evolving QA needs. Components of the quality systems that are reviewed continuously and updated as necessary including the QAP, the QMP, and CECs Quality Policies. Further, planning of PPRs and IPRs occurs years in advance so those components of our quality system are reliably performed and occur on a continuous basis.

3.1.4 Management Assessments

The results of the IPRs and PPRs are the primary assessment tools used by management to trigger updates to CEC's quality systems. The two primary management groups reviewing those results to identify quality concerns are the Executive Committee and the Management and Operations Committee. Both committees assess input from the IPRs and PPRs on a continuous basis to update CEC's quality systems as concerns are identified. Additionally, Practice-specific concerns identified by the IPRs and PPRs are addressed by Office Leads, Office Practice Leads and other leaders as concerns are identified.

3.1.5 Training

Training regarding CEC's QA systems is provided both through structured review of CEC's Quality Policies and through engagement with the systems during project performance. The Quality Policy training typically occurs during brown bag sessions in individual offices. Ongoing opportunities for professional development are provided by CEC as a method to improve and maintain the quality of our services. These programs include seminars, continuing education activities (including in-house "brown bag" sessions), sponsorship of professional society participation, and new employee training. Approval of individual staff participation is generally granted by an Office Lead, Office Practice Lead, or a designee. Professional development activities are implemented on an employee-by-employee basis considering the usefulness of the activity with respect to the employee's development within CEC and the anticipated need for the skills being developed.

Technical training is typically provided to employees via on-the-job training. This training will typically consist of observing a task, performing the task with supervision, and performing the task without direct supervision but with scrutiny of results.

3.1.6 Systematic Project Planning

The planning and performance of projects is addressed by CEC Quality Policies and through CEC's Project Manager Training Program. Specifically, Quality Policies PM-01 through PM-10 address project performance from planning through implementation. Similarly, CEC's Project Manager's Training Program outlines the quality procedures used to manage projects from origination through closure.

3.1.7 Project-Specific Quality Documentation

Documentation is critical to ensure work is done correctly and available for review, as needed. Proper documentation saves resources by enabling staff to review proposed work, minimize errors and omissions, and permits future work to build smoothly upon already completed work. Documentation becomes particularly important as staff are reassigned or moved to other positions. New staff must be able to review past work to ensure ongoing project consistency and quality. Quality reviews of calculations, drawings and figures, tables, laboratory test results, and deliverable documents are documented through appropriate system.

3.1.8 Project and Data Assessments

Projects and the data supporting those projects are typically assessed as part of CEC's IPR and PPR programs. All projects are not assessed by those programs, only representative projects. The representative assessment of projects has been successful in identifying quality concerns that need to be addressed.

3.2 QUALITY ASSURANCE PROGRAM TOOLS

3.2.1 Quality Management Plan

The QMP serves as the umbrella document that specifies how QA procedures will be implemented for environmental projects. It encompasses the stages of strategizing, executing, and evaluating QA activities.

3.2.2 Training Plans

CEC personnel receive training in the responsibilities, duties, and associated program elements, codes, standards, and procedures of the quality system. The training may include formal instruction, seminars, on-the-job training, participation in technical conferences, and other activities determined to be appropriate. Training needs and the achievement of training objectives are internally documented to ensure management is aware of which employees have been trained in the necessary techniques to carry out quality-related tasks. Training is further discussed in **Section 4**.

3.2.3 Quality Assurance Project Plans

QAPPs are project or program-specific documents that establish the method by which QA-relative objectives will be met or exceeded. QAPPs are typically needed where data collection and analysis will be associated with a project or an entire program area. A QAPP dictates the minimum requirements for project management, data measurement, data acquisition, assessment, oversight, data validation and data usability. Each QAPP should include the main elements listed in the document "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5)" (March, 2001).

3.2.4 Standard Operating Procedures

An activity that is performed regularly and requires uniform conduct each time it is performed should be done according to a standard accepted methodology that is documented in a written SOP. Details on CEC's SOP development, preparation, content, format, review, approval, release, and revision are contained in **Section 9** of this QMP.

3.2.5 Data Verification and Validation

Assessments of environmental data-related programs provide information that is used in planning and implementing environmental programs and in improving the quality system. These assessments, processes for improvement, and audits are discussed in **Sections 9 and 10**.

4.0 PERSONNEL QUALIFICATIONS AND TRAINING

4.1 TRAINING POLICY

CEC's policy on training addresses both management and staff. It is CEC's policy that both management and staff personnel will only be assigned to specific positions or project assignments when they are properly educated/trained to achieve the goals of their assignments. To that end, training programs for both management and staff have been established and are operating. Training for both management and staff follow the general guidelines established by CEC's Do, Manage, Market, Lead (DMML) career path.

4.2 PROFESSIONAL DEVELOPMENT

Professional development is encouraged for all levels of employees as a method to improve and maintain the quality of our services and products. These programs include seminars, continuing education activities (including in-house "brown bag" sessions), sponsorship of professional society participation, and new employee training. These activities are conducted under the general direction of the President of CEC and his/her designees. Approval of individual staff participation is generally granted by an Office Lead, Office Practice Lead, or a designee. Professional development activities are implemented on an employee-by-employee basis considering the usefulness of the activity with respect to the employee's development within CEC and the anticipated need for the skills being developed. Additionally, CEC provides in-house loss prevention training to staff.

A company-wide brown bag session is held approximately once per month. Each office conducts its own additional training program based on its specific needs.

Additional training will be provided to employees via on-the-job training. This training will typically consist of observing a task, performing the task with supervision, and performing the task without direct supervision but with scrutiny of results.

4.3 MANAGEMENT TRAINING

Management training for CEC managers begins with CEC's Project Manager training. The course is several days in duration and addresses topics such as basic project management through business development and human resources. Additional training is provided to managers including a senior management knowledge transfer program and senior leadership development program. CEC managers also often attend short-courses and receive coaching to improve their leadership skills.

4.4 STAFF TRAINING

CEC maintains professional development programs as a standing policy of the firm. The purpose of this program is to provide motivation and assistance toward the maintenance of a high degree of skill and knowledge among the professionals of the firm. This is achieved through a series of programs directed toward improvement of practice methodology and development of the relevant experience and education of employees. CEC programs are designed around the concept that enhanced professional development and training of our employees, in turn, improves the overall quality of work.

CEC's dedication to continuing education is demonstrated by a continuing education benefit that pays for seminar attendance and college courses related to employees' work at CEC. The continuing education program is detailed in the Employee Guidebook.

CEC personnel performing work on environmental projects shall be qualified to perform assigned work. Initial and ongoing personnel qualifications shall be determined, training needs shall be identified, access to appropriate training opportunities shall be provided, and the acquisition of needed knowledge, skills, and abilities shall be verified and documented.

All CEC employees are trained in the following areas:

- Core training for managers and supervisors;

- Computer software;
- Harassment and domestic violence awareness;
- Ethics;
- Customer service;
- Job-required safety and health; and
- Defensive driving when applicable.

4.5 TRAINING DOCUMENTATION

CEC maintains records of training through a combination of a third-party Learning Management System (LMS) used for online training and internal records stored on CEC's premises for company-hosted, job-related learning events. The LMS data serves as the official data record for basic training that may apply to multiple disciplines. Offices, practices, or supervisors may also maintain individual training information for their staff members.

Employees are required to renew their training through the LMS on a set, course-dependent schedule (usually annually or bi-annually). Statutory, regulatory, and professional certifications, accreditations, licenses, or other formal qualifications are monitored at the office level and renewed as necessary.

5.0 PROCUREMENT OF ITEMS AND SERVICES

CEC routinely engages subcontractors and subconsultants (i.e., contractors, consultants, drilling firms, testing laboratories, etc.) (collectively "subcontractors") in the performance of work for our clients. In order to engage these subcontractors for services, an executed contract must be in place. Proper contract management with those subcontractors is critical to project success

5.1 PROCUREMENT DOCUMENTS

Project Managers have the primary responsibility for defining in writing the requirements for all procurements in one or more procurement documents (e.g., requests for proposals, requests for quotes, etc.). Purchase requests for goods and services should include adequate detail to specify the quality and performance expectations of the acquired items (ranging from specific catalog item number through bid specification). These documents specify tasks and/or products, as well as technical, quality, administrative, and other requirements. The nature of the work, the location, and the anticipated cost are factors that contribute to the determination of when a formal procurement document is necessary. All services and grant procurements are reviewed and approved by the Principal prior to issuance.

CEC's established subcontracts and work authorization forms and procurements documents must also accompany requests for proposals to establish the term of engagement with the selected offeror. Those documents may only be changed by CEC's legal group. Those documents also request information on the offerors' insurance and safety performance.

5.2 REVIEW OF SOLICITATIONS AND PROVIDER SELECTION

The Project Manager is responsible for review of responses from prospective providers and summarizes the results of the proposal evaluations for review by the Principal. Selection of a preferred provider does not need to be made solely on the basis of price. Other factors that should be considered include safety performance, approach to providing services, schedule, and business status. The Principal and the Project Manager make a joint decision on provider selection.

5.3 ACCEPTANCE OF ITEMS AND SERVICES

Items and services received from suppliers are evaluated upon delivery against acceptance criteria (i.e., work authorization, product, and technical specifications, and technical, quality, administrative, and other requirements) contained in procurement documents. Project Managers, or designees, determine whether acceptance criteria have been met and whether items and services are adequate and appropriate for their application. Items and services that do not meet acceptance criteria are not accepted for use. Corrective actions may range from repair or replacement of defective deliverables to re-award of procurements.

5.4 ACCEPTANCE OF ENVIRONMENTAL LABORATORY DATA

Environmental laboratory data quality is of highest importance to the performance of environmental projects. All environmental laboratory data received will be reviewed against established criteria and will be validated consistent with the quality level of the project. Data not meeting quality criteria will be rejected and corrective actions taken with the subcontracted laboratory consistent with the degree of corrective action necessary.

6.0 DOCUMENTATION AND RECORDS

Documents that specify requirements, procedures, and instructions affecting the quality of environmental programs shall be adequate for the intended purpose and shall be controlled. QA records will be produced, controlled, and maintained to reflect the achievement of the required quality for completed work and to fulfill statutory, regulatory, and contractual requirements. CEC's document preparation guidelines are outlined in Quality Policy DD-01.

6.1 QUALITY ASSURANCE DOCUMENTS

Documents that specify quality-related requirements and instructions may include, but are not limited to, the following:

- CEC's QAP;
- CEC's QMP;
- QAPPs;
- SAPs and QAPs;
- contracts and work orders; and
- technical SOPs, including organization/program-specific QA procedures and checklists

It is the responsibility of the Principal and the Project Manager to identify which, if any, of the QA documents are applicable to a specific project, and if so, verify the requirements of the appropriate document are applied to the project.

6.2 QUALITY ASSURANCE RECORDS

QA records are items that furnish objective evidence of the quality of items or of activities that have been verified and authenticated as technically complete and correct. QA records may include correspondence, photographs, drawings, forms, completed checklists, reports, and electronically recorded data. It is the responsibility of the Project Manager to determine whether other records are required to reflect the achievement of required quality for completed work and to fulfill any

statutory, regulatory, or contractual requirements for environmental programs. If such records are required, it is the responsibility of the Project Manager to ensure these records are identified, verified, authenticated, handled, retained, and disposed of so that the records are accessible and protected from damage or deterioration. Project-specific quality assurance records are identified in quality assurance project plans.

6.3 DOCUMENT PREPARATION AND REVIEW

Company QA guidance documents are proposed, reviewed, and approved by appropriate staff and managers of CEC. Revisions to guidance documents are made as necessary and reviewed in the same manner as new guidance documents. New guidance documents and revisions to existing guidance documents are uniquely identified. The President/CEO approves each new or revised guidance document, prior to issuance. Only the most recent versions of issued guidance documents are maintained in CEC's intranet site for use by staff and managers.

The processes for the preparation and quality review of calculations, drawings, and specifications are specified in CEC's Quality Policies. Signature requirements for documents and drawings issued by CEC are documented in CEC Quality Policies RC-01 and RC-02, respectively. Documentation of reviews is retained electronically.

6.4 DOCUMENT RETENTION AND CONFIDENTIALITY

Document and record storage within each office is the responsibility of the office Records Information Management Administrator. Some offices have established controlled-access central file systems while others regulate storage to a lesser degree. All CEC employees have access to appropriate company files during normal business hours. All files or copies thereof will remain in the possession of CEC at all times.

Confidential documents are stored in secure areas within each office and access to such files is granted by the Records Information Management Administrator if approved. Procedures for chain

of custody and confidentiality for evidentiary documents and records are documented in QAPPs, Sampling and Analysis Plans (SAPs), and other QA plans.

Additional information on CEC's records retention policy can be found in CEC Quality Policy RC-06.

7.0 COMPUTER HARDWARE AND SOFTWARE

Information Technology (IT) is critical to provide quality services to CEC clients. IT systems are used to gather, store, analyze, and publish data for use by company staff, clients, and the general public. Virtually every aspect of the CEC's activities is supported by some type of IT tool. For these reasons, it is imperative that these IT tools are managed to ensure the reliability, accessibility, and quality of company data.

CEC's IT Team separates the responsibility between the hardware and software aspects of IT into two subgroups. As such, each of those aspects of IT are addressed separately in the subsections that follow. Note that both environmental and non-environmental project/program hardware and software are managed in the same fashion to ensure the quality of all IT functions.

7.1 HARDWARE

Hardware aspects of CEC's IT systems are managed by CEC's IT Infrastructure Subgroup. The subgroup is responsible for selecting, installing, testing, maintaining and controlling the hardware used by CEC employees. The IT Infrastructure Subgroup not only manages the computers and servers, but it also manages CEC's pads, cell phones, and cloud data storage and sharing system. The IT Infrastructure Subgroup works in conjunction with the COO and CTO on decisions related to the continuous up-grading and improvement of the IT hardware systems. When changes to hardware are proposed, the IT Infrastructure Subgroup tests those new systems for compatibility with existing equipment and to assess impacts, if any, on users. The IT Infrastructure Subgroup also confirms during the testing phase that the proposed equipment achieves expected performance standards.

For desktop and laptop units, comprehensive controls are in-place over the processing environment provided by those machines. These controlled environments result in significant benefits to the stability of the workstation and the security of our data, both of which are critical starting points for any business process which intends on providing quality data.

Policies regarding mobile devices are more flexible. However, the use of these devices is generally limited to data collection. Mobile devices are generally not used for storage, analysis, and publishing, thereby avoiding some of the more complex issues related to those activities.

7.2 SOFTWARE

CEC uses both commercial software and software developed in-house for project performance and project management. Both have support provided by CEC's IT Software Subgroup. The software support by the IT Software Subgroup include Microsoft Office, Autodesk CADD, and ESRI GIS products. A subgroup, the Electronic Data Management (EDM) Group, focuses on in-house software developed primarily for environmental projects.

7.2.1 Commercial Software

The identification of the need for new commercial software for purchase typically is initiated by a practice of administrative group. Once identified, the request is evaluated by CEC leadership and the IT Software Subgroup. If a decision is made to proceed to potentially purchase the software, the IT Software Subgroup obtains the software to test its compatibility, function and the ability to achieve required standards. Only after successful testing is new commercial software purchased and deployed company-wide. A similar process is used for software upgrades. Only after testing by CEC's IT Software Subgroup are software upgrades deployed firm-wide.

A standard suite of office software and other commonly used programs is specified by IT for all employee computers. Installation and configuration are carried out by IT personnel. Other off-the-shelf software required by employees is tested to ensure that it meets user needs and will function properly on the company network, providing the stability required to produce quality work. This is done in accordance with several IT policies including, but not limited to, ones dealing with Accessibility, Architecture, Security, Project Management, and Web development. When off-the-shelf software is deployed as part of a business process that manages or produces data, it is largely up to the Office Lead to enforce procedures which will maintain data integrity.

7.2.2 In-House Software

Many of CEC's project management and data management applications were developed by CEC's IT Software Subgroup. A large number of applications used primarily for environmental projects were developed by CECs EDM Group. Included in those application is an application for electronic data receipt of environmental laboratory data from subcontractors and the analysis of that data. CEC software development projects adhere to the company's Quality Policy WP-05. This ensures a consistent model by which IT projects are managed and IT products are developed, tested, and acquired.

7.3 SYSTEM SAFEGUARDS

Systems and data are protected against malicious and unintended loss and corruption through a variety of measures designed to restrict access, detect threats, and reduce the probability of loss.

7.3.1 System Access

Access to systems is currently administered during new employee onboarding. This process is initiated by an employee's supervisor and requires supervisor approval before any permissions are granted or changed. Users are set up to access only the systems they need to do their work. Access is controlled by dual factor user ID/password authentication both at the desktop level and application level. Access to CEC's network must occur either on premises or via a Virtual Private Network.

7.3.2 Virus Intruder Protection

CEC uses Mimecast for virus protection. Further, CEC uses Mimecast tools to provide periodic penetration testing and anti-penetration training for all CEC staff.

7.3.3 Backup and Recovery

IT Hardware Subgroup has the responsibility for managing the backup and recovery of all data stored on CEC servers. CEC uses the Nasuni system to backup all servers daily. Nasuni is a cloud-based system where CEC's data is simultaneously stored and duplicated at three separate physical locations. Further, as any document or drawing that is stored on a CEC server is updated immediately any time modifications are made. The files are immediately updated in the cloud storage at all three locations. The system also allows for rapid recovery of data in case of either human or non-human error the required data should a restore be required.

8.0 PLANNING

8.1 PROJECT PLANNING

Projects involving the generation, acquisition, and use of environmental data shall be planned through the development of QAPPs, SAPs, work plans, or other planning documents. These documents shall be developed by project managers, QA staff, technical staff, and management in conjunction with subcontractors, where applicable, using a systematic planning process, such as the Data Quality Objectives (DQO) process, as defined in Guidance for the DQO Process, EPA QA/G-4, or comparable alternative. The project schedule, deliverables, budget, and personnel will be clearly defined by the Project Manager in the scope of work along with any associated assumptions such that all contractual, regulatory, or other applicable requirements. DQOs may be applied to most data collection activities associated with a project or program. In particular, DQOs should encompass the total uncertainty resulting from sampling and analysis activities. From an analytical perspective, a process of developing the analytical data requirements from DQOs of a project is essential. These analytical data requirements serve as measurement performance criteria or objectives of the analytical process and are often referred to as measurement quality objectives (MQOs).

CEC project planning activities (e.g., planning meetings) are intended to:

- Identify data users;
- Ensure that data collected are of the type and quality appropriate to their intended use;
- Generate the sampling design (e.g., what, when, where, and how to collect samples);
- Ensure data management processes and procedures are documented (e.g., data coding, submittal, receipt, review, verification, validation) to ensure acquired (existing) data will be appropriate for their intended use; and
- Optimize the data collection effort by promoting communication and gathering input from all involved parties.

QAPPs shall conform to requirements contained in EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5. Other project planning documents will conform to program requirements which include adherence to the principles of EPA QA/R-5.

8.2 REVIEW AND APPROVAL OF QUALITY ASSURANCE PROJECT PLANS

QAPPs will undergo review and approval in a similar manner to other documents. Specifically, the Project Manager, Project Quality Manager, and Principal will review and approve the QAPP. Revisions to QAPPs will follow the same process as initial review and approval. The other planning documents cited in Section 8.1 will follow the same review and approval process as the QAPPs.

8.3 DATA COLLECTED FOR OTHER PURPOSES

Data collected by an operation outside of the planning processes described herein, or by an organization outside of CEC will be evaluated for usability by personnel knowledgeable on the subject data. This may be done by comparing as many documented aspects of the outside data operation as possible to the elements of its approved-QAPP counterpart. Each project team will need to evaluate how closely the data agree, and where differences exist, determine if they are substantial enough to allow the use of the data with qualifications (e.g. greater or lesser statistical confidence levels), or not allow the use of the data at all. The project team will document their findings in a written report along with their recommendations on the usability of the data.

Each practice shall be responsible for developing guidance for acceptance and procedures for reviewing, verifying, and validating environmental data procured or provided by entities outside of CEC's span of control (2nd party data) not otherwise subject to a QAPP. SOPs, DQOs, SAPs and related documentation of such standards and procedures shall be maintained in a central location.

9.0 IMPLEMENTATION OF WORK PROCESSES

9.1 ACTIVITY STANDARDIZATION

CEC uses its SOP Development, Format, Approval, and Distribution guidance to guide staff and management in standardizing regularly performed activities. This procedure defines the process for procedure standardization, SOP preparation, content, format, review, approval, release, revision, archival, and procedure withdrawal.

CEC uses the developed SOPs and templates to ensure that regularly performed activities, such as sampling and monitoring techniques, operational procedures, or boilerplate document preparation, are conducted uniformly and appropriately given the needs of a task. Written SOPs help to ensure standardization of work on a project. SOPs are required with a QAPP for certain types of project work to verify acceptable procedures are being used. SOPs submitted with the QAPP must be used in implementing the project and will be used when auditing work. When a need is identified, practices are responsible for developing, documenting, and implementing standard procedures for appropriate routine, standardized, special or critical operations, particularly those involving collecting, compiling, storing, or analyzing environmental data. Reviews of SOPs follow the procedures identified in **Section 6.3**.

9.2 USE OF STANDARD OPERATING PROCEDURES

Through management oversite and performance reviews CEC verifies that approved QAPPs and SOPs are implemented. These channels of authority and implementation mechanisms address scheduled and unanticipated changes to SOPs.

9.3 STANDARD OPERATING PROCEDURE MAINTENANCE

Individual practices are responsible for developing and maintaining SOPs for activities and operations within their scope of responsibility. SOPs are reviewed annually and upon identification of changes in best practices observed in the relevant industry(ies).

10.0 ASSESSMENT AND RESPONSE

10.1 QUALITY SYSTEM ASSESSMENTS

CEC's quality systems are assessed formally using both the IPR and PPR programs. Those structured reviews/assessments of all of CEC work practices occur continuously year to year to provide regular input to CEC's Executive Committee and Management and Operations Committee (known as CEC's leadership committees) on system performance. Guidance documents have been developed for the IPR and PPR programs that establish consistent procedures for those assessments. The assessments performed evaluate CEC's systems for:

- Adequacy - whether an item or activity meets requirements;
- Compliance - whether an item or activity is being implemented as specified;
- Readiness - whether the status of an item or activity warrants start-up or continued use of a facility, process, or activity;
- Effectiveness - whether an item or activity achieves desired results; and
- Verification - whether corrective action has been planned, initiated, or completed.

The results of the IPRs and PPRs are presented in reports/summaries that are reviewed by CEC's leadership committees to assess whether actions are needed to address concerns at either an office, practice or corporate level. See Section 10.5.

Additionally, assessments of CEC's quality systems occurs continuously during the following typical day-to-day performance of business activities:

- Performance evaluations;
- Technical reviews;
- Data quality assessments; and
- Audits of data quality.

Concerns identified during those activities will be addressed by CEC operations through the Office Leads, Vice Presidents of Operations, and the COO.

10.2 ASSESSMENT PERSONNEL

The nature of CEC's IPR and PPR programs results in all CEC employees having input into the assessment of CEC's systems. The final assessment of findings is performed by CEC leadership personnel.

10.3 ASSESSMENT FREQUENCY

CEC's IPR and PPR programs are ongoing and result in a continuous assessment of CEC's systems. The same is the case for the performance evaluations, technical reviews, and data quality assessments.

10.4 ASSESSMENT PLANNING

The IPRs and PPRs are planned and scheduled at least a year in advance to ensure continuous feedback to CEC leadership.

10.5 REVIEW AND RESPONSE

10.5.1 Review of Assessments

The results of the IPRs and PPRs are reviewed by CEC leadership committees to identify actions that might be needed to address quality concerns. Additionally, the results of the IPRs are reviewed by the Office Lead whose office was assessed, the Vice President of Operations assigned to that office and the COO to assess any concerns identified. The PPR results are reviewed by the Corporate Practice Lead, Office Practice Lead, and CTO to assess any concerns identified. Concerns identified by the less formal assessments are reviewed and acted upon beginning at the project level and moving up the chain of command as appropriate.

10.5.2 Corrective Actions

Corrective actions, when necessary, are addressed with formal plans directed and monitored by CEC's leadership committees. Those plans include specific actions that need to be taken along with schedules for implementation.

At the project level, some corrective actions are initiated and completed immediately by the Project Manager or supervisory staff. Significant problems with work products trigger re-evaluation of any associated quality system tools. In such instances, CEC does not intend that Project Managers and Practices await scheduled assessments and corrective actions, but instead recommends the immediate correction of problems discovered during real-time surveillance.

11.0 QUALITY IMPROVEMENT

Systems, documents, and tools described in preceding sections summarize the approach taken by CEC to plan, organize, implement, document, monitor, and assess quality systems. CEC's leadership identifies and addresses concerns through formal and informal assessments. All personnel are also encouraged to identify, plan, implement, document, and evaluate quality improvement activities for their areas of responsibility. Personnel should prevent quality problems wherever possible, report problems as they occur, and identify opportunities for improvement.

11.1 QUALITY MANAGEMENT SYSTEM

CEC's Executive Committee and Management and Operations Committee through both the IPR and PPR programs identifies areas of CEC's quality systems in need of correction or improvement, makes recommendations for implementing needed change, and specifies the resources needed for implementation. Formal plans are developed to address any concerns. The President or a designee then determines how the recommendations should be carried out and allocates the necessary resources.

11.2 ORGANIZATIONAL IMPROVEMENT

Opportunities for improvement of CEC processes and programs beyond the requirements of this QMP are identified in a number of ways, among which are:

- The auditing and assessment processes; and
- Ongoing management review at the office and corporate level.

Where opportunities for improvement are identified, management determines how these might be implemented and allocates the necessary resources.

11.3 CLIENTS AND STAKEHOLDERS

In addition to internal opportunities identified, CEC uses a number of different methods to receive and act on suggestions for improvement from clients and stakeholders. These include, but are not limited to:

- Solicited comments from the general public;
- Unsolicited comments from the regulated community, general public, and other interested parties; and
- Consultation with legislators and other agencies.

Management is responsible for receiving such comments and suggestions and determining how best to act on them.

APPENDIX G

INSPECTION PLAN

INSPECTION PLAN

MAX ENVIRONMENTAL TECHNOLOGIES, INC.

CONTAINMENT AND PROCESSING BUILDING AND WASTE CONTAINER STORAGE PAD EVALUATION AND REPAIRS

Below is an outline Inspection Plan for the Containment and Processing (CAP) Building and Waste Container Storage Pads. Note that this Inspection Plan is conceptual level in nature. Detailed inspections shall be performed by field personnel and overseen by professional engineers. Additional steps may be required in the field to adequately inspect the components described below. Results of the inspections described below will be summarized and included in a final Report.

1.0 CAP BUILDING REPAIRS

1.1 Pre Work Inspection

1.1.1 CEC will visit the MAX's Yukon facility to observe and document the pre-repair condition of the CAP building.

1.1.1.1 Photographs of the pre-repair conditions will be taken and included in a Report to be prepared at the end of the repair work.

1.1.2 CEC will observe areas easily accessible and observable with minimal intrusion to the existing building and ongoing MAX operations.

1.1.2.1 CEC notes this work effort has been completed as of the time of this Inspection Plan submission.

1.2 Post Work Inspection

1.2.1 MAX has contracted with CAVCON Construction to perform repairs on the CAP Building. Initial repairs to the building will be made by CAVCON. Following these initial repairs, CEC will observe the building for any additional areas not meeting the containment building regulations (40 CFR § 264.1101). CEC will also conduct a structural evaluation of the CAP Building and, specifically, an evaluation of the floor in each bay, the interior back wall, and support beams for any visual signs of structural damage that would prohibit use as a containment building.

1.2.2 During the Post-Work Inspection, CEC will prepare a field sketch noting deficient areas.

1.2.3 CEC will coordinate with MAX intended activities that are to be performed in other areas of the building.

1.2.3.1 More specifically, MAX/CEC will coordinate if material storage can be performed in the open bay of the facility.

1.2.4 CEC will relay deficient areas to MAX such that MAX can coordinate additional repairs.

1.3 Follow-Up Inspections

1.3.1 Following additional repairs noted above, CEC will coordinate with MAX to observe the repaired areas.

1.3.2 Additional repairs may be required as a result of these additional follow-up inspections.

1.3.3 MAX will coordinate with the contractor to make the additional repairs as necessary.

1.3.4 CEC will repeat the follow-up inspection process until no additional defects are noted.

2.0 CAP BUILDING LEAK DETECTION

2.1 Leak Detection Evaluation

2.1.1 Perform a camera inspection on the leak detection piping to look for signs of damage and wetness. This will be done in an attempt to isolate the location where leakage is occurring.

2.1.2 Perform a water quality test on any leak detection pipe discharge. This will be done in an effort to determine if the leakage is coming from groundwater or from leakage through the building.

2.1.3 Consider flushing the pipe to clean residual contaminants that may have "backed up" into the leachate detection pipe from the collection sump.

2.1.4 Consider dye testing areas to identify where liquids are entering the leak detection piping. This may involve placing various color dye packs in pooled water within the containment building to identify areas that may be leaking.

2.1.5 If defects to the existing leak detection configuration are noted, CEC will coordinate with MAX to make the appropriate repairs.

2.1.6 CEC will inspect the repaired leak detection to verify appropriate repairs have been completed.

3.0 HAZARDOUS WASTE CONTAINER STORAGE PAD

3.1 Hazardous waste storage pad evaluation

3.1.1 CEC will evaluate all of the currently permitted hazardous storage pads on the MAX Yukon facility.

3.1.2 CEC will identify areas where pooling of stormwater has occurred. CEC will evaluate each occurrence of pooling water and will make recommendations to correct the features.

3.1.3 After repairs have been made, CEC will revisit the site to observe the repaired storage pads. Additional deficiencies will be noted. The additional deficiencies will also be relayed to MAX to coordinate additional repairs.

3.1.4 This process will be repeated until no deficiencies are notes.

3.1.5 CEC notes that MAX may elect to not repair the hazardous waste storage pads at this time and take them out of service. This is a result of the hazardous waste storage pads no longer being needed operationally. These pads will be clearly marked with signage that they are not to be used for hazardous waste storage. The pads will no longer be returned to service until appropriate repairs have been made and approved by the EPA. Decommissioning of the storage pads will occur at a later date, with certification of the decommissioning being submitted to the EPA.