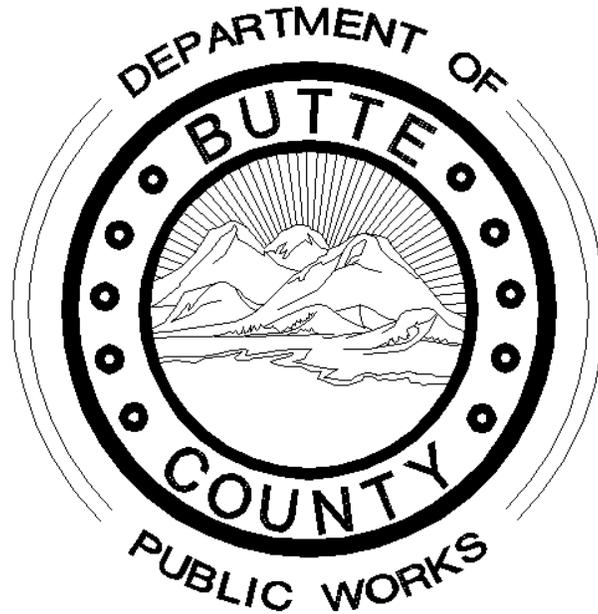


COUNTY OF BUTTE



REQUEST FOR PROPOSALS

FOR

**CONSTRUCTION QUALITY ASSURANCE
MONITORING AND REPORTING**

FOR THE

**CONSTRUCTION OF
MODULE 4, PHASE E**

NEAL ROAD RECYCLING AND WASTE FACILITY

COUNTY PROJECT NO. 757-5918

*Butte County Department of Public Works
7 County Center Drive
Oroville, CA 95965
(530) 538-7681
FAX (530) 538-7171*

OCTOBER 9, 2012

**REQUEST FOR PROPOSALS
CONSTRUCTION QUALITY ASSURANCE MONITORING AND REPORTING
FOR THE
CONSTRUCTION OF MODULE 4, PHASE E
NEAL ROAD RECYCLING AND WASTE FACILITY
COUNTY PROJECT NO. 757-5918**

INTRODUCTION

The Butte County Department of Public Works is requesting sealed proposals from qualified consultants to conduct Construction Quality Assurance (CQA) Monitoring and Reporting for the Construction of Module 4, Phase E at the Neal Road Recycling and Waste Facility, Butte County, CA (County Project No. 757-5918).

The Neal Road Recycling and Waste Facility (NRRWF) is located at 1023 Neal Road, Paradise, California, approximately 1-mile east of State Highway 99 and approximately 7-miles south of the City of Chico. The NRRWF operates as a Class III municipal solid waste landfill as defined in the sites permitting document.

The NRRWF operates daily from the hours of 7:00AM to 4:00PM. The NRRWF is closed on the following days: New Years, Easter, July 4th, Thanksgiving and Christmas.

Butte County intends to award a contract to a consultant that will meet the qualification criteria and has successfully performed services on similar projects in the past. The successful consultant will be required to enter into a contract with the County for the services requested in this RFP within a reasonable time after award of contract. A consultant submitting a proposal must be prepared to use the County's standard contract form. The contract will include terms appropriate for this project. Generally, the terms of the contract will include, but are not limited to: (1) completion of the project within the timeframe provided; (2) no additional work authorized without prior approval; (3) no payment without prior approval; (4) funding availability; (5) termination of contract under certain conditions; (6) indemnification of the County; (7) approval by the County of any subcontractors; and (8) minimum appropriate insurance requirements. A Standard Contract is attached as Attachment A to this RFP. The County intends to award a contract substantially in the form of the Model Contract to the selected Consultant. The term of the contract will encompass the entire construction of the base liner through approval by the regulatory agencies.

BACKGROUND

The construction of the Phase E follows the construction of Phase D completed in 2011. The Phase E construction will require the preparation of the subgrade for placement of geosynthetic liner components on the middle slope above Phase D and west of Phase C. Construction quality assurance monitoring and reporting will be required during the Construction of Phase E to meet regulatory requirements set forth in Title 27, Division 2 of

the California Code of Regulations and Subtitle D of the Resource Conservation and Recovery Act.

Construction will follow award of a contract scheduled for October 2012. Work may begin in November 2012 and proceed until completed. The Construction Drawings, Special Provisions, Construction Quality Assurance Plan (CQA Plan) are accessible at www.buttecounty.net/publicworks. Search for County Project No. 757-5918.

SCOPE OF SERVICES

Overview

The County desires to retain a qualified consultant (Consultant) for CQA monitoring and reporting services required by State and Federal Regulations. The Consultant will conduct CQA inspection, monitoring, testing and documenting to validate that the base liner and related components are constructed in accordance with the plans and specifications and meet the requirements of the regulations. In addition, the Consultant will prepare a Final Construction Quality Assurance Report to verify for the State that site construction is in compliance with Title 27, Division 2 of the California Code of Regulations and Subtitle D of the Resource Conservation and Recovery Act.

The CQA Plan sets forth the responsibilities and procedures to evaluate whether the installation of the general earthwork, geosynthetics, geocomposites, geotextile, and other components of the project are in accordance with the regulations and Special Provisions and Construction Drawings. Implementation of the CQA Plan will ensure that Module 4, Phase E is constructed in accordance with the design specifications.

Deliverable

The Consultant shall submit a draft CQA Report for County review within 20-working days following substantial completion of the final items of work which require inspection, monitoring, testing and documenting as identified in the CQA Plan. The County will provide comments and return the draft to the Consultant. The Consultant shall then prepare a final CQA Report within 20-working days for submittal to the State regulatory agencies. Acceptance of the Final CQA Report by the State Regulatory agencies will conclude the CQA monitoring and reporting services.

FORMAT FOR PROPOSALS

Responses to the Request for Proposals must be made according to the requirements set forth in this section, both for content and for sequence. Failure to adhere to these requirements or inclusion of conditions, limitations or misrepresentations in a response may be cause for rejection of the submittal. Use 8-1/2" x 11" sheets (fold outs are acceptable for charts, etc.). Type size must be large enough to be easily legible, but shall not be smaller than 10 point.

A. County Contact Person:

Submit one signed, unbound original and three (3) complete copies of the submittal to:

W. Eric Dugger, P.E.
Solid Waste Engineer
County of Butte, Dept. of Public Works
7 County Center Drive
Oroville, CA 95965

Mr. Dugger will serve as the County's contact person for this project who will also respond directly with the Consultant's project manager for questions, inquiries, and coordination.

Please contact Mr. Dugger at (530) 879-2351 or via email at edugger@buttecounty.net.

B. Mandatory Content and Sequence of Submittal:

1. Cover Letter

Section 1 shall be a maximum two-page Cover Letter and introduction, and shall include the name and address of the organization submitting the proposal, together with the name, address and telephone number of the contact person who will be authorized to make representations for the organization, the consultant's federal tax ID number and a list of subcontractors, if any. The cover letter shall include a statement that the proposal is valid for 60 days after receipt.

2. Table of Contents

Section 2 shall be a detailed Table of Contents and shall include an outline of the submittal, identified by sequential page number and by section reference number and section title as described herein.

3. Background and Organization

Section 3 shall be a maximum of 6-pages (not including resumes) entitled Background and Organization and shall include a description of the proposing consultant's background, organization, resources, and key personnel as listed below for successfully developing and completing this project. Resumes may be included at the end of this section. Submit in the

order identified below:

- a. **Background and Organization.** In this section, describe your firm's background and organization and resources and why this is advantageous to the project.
- b. **Key Personnel.** Identify and describe the CQA Engineer and CQA Monitor(s) and their background and experience as related to this project. In this section also include any subcontractors/consultants/labs that are considered as key on this project. In a table, list the proposed project staff and their number of years doing related work each has performed.
- c. **Resumes.** Include resumes for Consultants staff assigned to this project. Limit resumes to 3-pages each.

4. Experience Summary

Section 4 shall be entitled "Experience Summary" with a limit of three (3) projects and a maximum of 6-pages. This section shall describe ongoing or recently completed related projects along with a discussion comparing similarities with this proposed project. If Consultant has provided more than one similar service to Butte County in the past, then only one (1) Butte County project may be listed. This section shall also contain professional references, including names and telephone numbers for each project discussed in this section.

5. Previous or Current work with Butte County

Section 5 shall be limited to 1-page entitled "Work with Butte County." This section shall discuss whether the Consultant has in the recent past or is currently working with Butte County on similar projects. Limit previous work to within 5-years.

6. Proximity of Consultant

Section 6 shall be limited to 1-page entitled "Proximity of Consultant." An address of the closest office and a distance to the NRRWF will be provided.

7. Work Plan

Section 7 shall be a maximum of 10-pages entitled "Work Plan." The CQA Plan sets forth the responsibilities and procedures to evaluate whether the installation of the general earthwork, geosynthetics, geocomposites, geotextile, and other components of the project are in accordance with the regulations and Special Provisions and Construction Drawings. Implementation of the CQA Plan will ensure that Module 4, Phase E is constructed in accordance with the design specifications and regulatory requirements.

The Work Plan shall outline how the Consultant's team intends to identify, prepare and complete all tasks required in the CQA Plan and prepare a Final CQA Report. The Work Plan should discuss internal QA/QC. The Work Plan should identify construction work that

may require additional staff if required. The Work Plan should identify and estimate the number of tests for each component of the work requiring testing based on the bid quantities listed in the specifications. This estimate can be used in the Cost estimate portion of this RFP. The Consultant may include a brief section that discusses how to simplify, improve or reduce costs within the project.

The Work Plan shall include the preparation of a draft CQA Report to be prepared and submitted to the County for review and comment before the Final CQA Report is prepared. The Final CQA Report must verify that the construction is in compliance with Title 27, Division 2 of the California Code of Regulations and Subtitle D of the Resource Conservation and Recovery Act.

The 'Work Plan' will be incorporated into the agreement as Attachment II as the Scope of Work. The Construction Quality Assurance Plan, Module 4, Phase E, Neal Road Recycling and Waste Facility, Butte County as prepared by Golder Associates, dated September 2012 shall be incorporated into the agreement by reference.

8. Cost

Section 8 shall describe the cost portion of the proposal in detail and shall provide a firm price that identifies the cost of services as requested for the contract term. The term of this contract will be from Notice to Proceed until acceptance of the Final CQA Report by the Regional Water Quality Control Board.

1. Provide a cost breakdown for tasks needed to complete the project. This estimate should be broken down by personnel classification and hourly rates for each classification. The number of tests required shall be estimated and costs assigned. Provide a total cost for completing the project. The cost proposal must include the following tasks:
 - Inspection, monitoring, and testing preparation activities, pre-construction meeting, and mobilization, including any equipment (such as an office trailer).
 - Field staff and equipment. For estimating purposes, use thirty (30) days at 10.0-hours per day of field activities, inspection, monitoring, testing and documenting to complete the cost estimate. Separately list mileage charges, per diem charges and equipment charges. Sum all charges for the 30 days.
 - Contingency. The proposal shall include a contingency cost estimate based on an additional ten (10) days at 10.0-hours per day of field activities.
 - Supervisory/management staff for the duration of the field activities. Include any management visits to the project site during the CQA work and associated costs (mileage, etc.).
 - Onsite construction meeting schedule during the course of the project. Assume 1-meeting per week during the project.

- Construction material sample procurement, field test and equipment costs, shipping costs and laboratory fees. Base the type and number of tests on the information contained in the Construction Plans and Specifications and CQA Plan. Add a 10% contingency for laboratory testing in case of failed tests/retesting.
- Costs for preparation of the Draft and Final CQA Report.

Ensure that all costs your firm intends to charge for are included in the cost proposal.

The cost portion shall be submitted in a separate sealed envelope entitled Cost Estimate.

SELECTION PROCESS

The selection committee may include representatives from the other County departments. The criteria for selecting the Consultant recommended for selection by the Board of Supervisors is provided below.

A weighted selection method will be utilized to select a consultant based on the information provided in each submittal. Each evaluation criteria listed below will be assigned a weight.

- (1) Background and Organization (20). Does the Consultant have the background, organization, resources, and key personnel to provide the required services? Sub-contractors listed? Is the information clear and detailed?
- (2) Experience Summary (25). Does the consultant describe recent or ongoing related projects? Does the Consultant have sufficient experience in the kind of work required? Has the Consultant delivered on schedule? Are project references provided for projects discussed?
- (3) Previous or Current Work with Butte County (10). Has the consultant in the last 5-years provided similar services to the County?
- (4) Proximity of Consultant (10). Other factors being equal or relatively insignificant, the County shall strive to retain firms based in the local area, especially Butte County firms.
- (5) Work Plan (25). Is the Work Plan complete in listing tasks and time lines for the project? Does the Work Plan indicate familiarity with the project? Included anything in the Work Plan that might simplify, improve or reduce costs?
- (6) Cost (10). Is the estimated cost minus contingencies reasonable for the proposed project? Are contingencies listed?

Selection will consist of reviewing the proposals for required content. The proposals will

then be further reviewed and scored using the weighted selection criteria. Additional information may be requested from the consultants if deemed necessary.

The consultant with the highest score will then be presented to the Board of Supervisor's for award of contract. The Proposal Evaluation Form can be found at the end of this RFP.

COUNTY NOTICES

Any questions related to this RFP are to be directed in writing to the county contact person identified above. Do not contact other County personnel or selection committee members regarding this project or the selection procedures.

All proposing consultants responding to this RFP should note the following:

- A. All work performed for Butte County, including all documents associated with the project, shall become the exclusive property of Butte County.
- B. Butte County reserves the right to:
 - 1. Reject any or all submittals;
 - 2. Request clarification of any submitted information;
 - 3. Waive any informalities or irregularities in any qualification statement;
 - 4. Not enter into any agreement;
 - 5. Not to select any consultant;
 - 6. Cancel this process at any time;
 - 7. Amend this process at any time;
 - 8. Interview consultants prior to award;
 - 9. Enter into negotiations with one or more firms;
 - 10. To award more than one contract if it is in the best interest of the County;
 - 11. To issue similar RFPs or RFQs in the future; or
 - 12. To request additional information during the interview.
- C. The selected consultant is expected to perform and complete the project in its entirety.
- D. Any and all costs arising from this RFP process incurred by any proposing consultant shall be borne by the consultant without reimbursement by Butte County.
- E. Contractors that submitted a proposal in response to an RFP but were unsuccessful in their attempt to obtain a contract or recommendation for contract award may request a debriefing to learn the general reasons for selection of a competitor for contract award. Requests for debriefings shall be directed to the Solid Waste Engineer, 7 County Center Dr, Oroville, CA 95965-3334, telephone 530.879.2351. Debriefings may be conducted via telephone, Email or during a face-to-face meeting at the County offices in Oroville, California.

Companies that have received a debriefing, but continue to feel aggrieved in connection

with the solicitation or award of a contract may submit a protest to the Public Works Director, 7 County Center Dr, Oroville, CA 95965-3334. All protests must be made in writing, signed by an individual authorized to sign the submitted proposal, and must contain a statement of the reason(s) for the protest: citing the law, rule, regulation or procedure on which the protest is based. Contractor capabilities, project characteristics and/or pricing features that were not included in the contractor's proposal shall not be introduced during the protest process. The protest shall be submitted within seven (7) working days after such aggrieved person or company knows or should have know of the facts giving rise thereto or within seven working days following the debriefing.

CONSULTING AGREEMENT

The consultant selected shall be expected to execute a contract substantially as the one as Attachment A.

DISCLOSURE OF INFORMATION

All information and materials submitted to the County in response to this RFP may be reproduced by the County for the purpose of providing copies to authorized County personnel involved in the evaluation of the proposals, but shall be exempt from public inspection under the California Public Records Act until such time as a Contract is executed. Once a Contract is executed, the California Public Records Act limits the County's ability to withhold data relating to proprietary information or trade secrets, as defined by statute. If a Contractor's proposal contains any such proprietary information or trade secret that the Contractor does not want disclosed to the public, subsequent to the execution of the Contract, each sheet of such information SHALL be marked by the Contractor as "proprietary information" or "trade secret." If, after the Contract is executed, a third party requests a copy of any Contractor's proposal and such documents contain material marked "proprietary information" or "trade secret," the County shall withhold that information if it meets the statutory definition of proprietary information or trade secret and the Contractor agrees to defend, indemnify, and hold harmless the County in any subsequent legal action based on its withholding.

TIMING AND SCHEDULE

All responses to this RFP must be submitted to the address listed above on or before 4:00 p.m. on October 26, 2012.

Following receipt and review of all submitted proposals, a consultant will be selected and presented to the Board of Supervisor's for award of contract at their November 20, 2012 meeting. Upon approval by the Board, the contract process will begin with the goal of having a fully executed contract within 10-working days. The consultant selected and approved by the Board must be prepared to provide services by November 21, 2012 if necessary.

PROPOSAL EVALUATION FORM				
Evaluation Criteria	Weight	Company A	Company B	Company C
Background and Organization	20			
<input type="checkbox"/> Background <input type="checkbox"/> Organizational Structure <input type="checkbox"/> Identify Key Personnel, CQA Engineer, CQA Monitor(s) and Staff Members and their Roles in this Project <input type="checkbox"/> Subcontractors <input type="checkbox"/> Resumes				
Experience Summary	25			
<input type="checkbox"/> Current Relevant Projects <input type="checkbox"/> Recent Relevant Projects <input type="checkbox"/> Discuss Similarities with Current/Recent Projects to Proposed Project <input type="checkbox"/> Provided References <input type="checkbox"/> References Responses				
Previous/Current Work for Butte County	10			
<input type="checkbox"/> Has Consultant Previously or Currently Provided CQA Monitoring and Reporting Services to County				
Proximity of Consultant	10			
<input type="checkbox"/> Consultant Location				
Work Plan	25			
<input type="checkbox"/> Identified Tasks/Timelines <input type="checkbox"/> Discussion of QA/QC <input type="checkbox"/> Other				
Cost Proposal	10			
<input type="checkbox"/> Weighted Cost Score				
Proposal Score	0 - 100			

ATTACHMENT A
STANDARD CONTRACT

ATTACHMENT I

STANDARD INSURANCE REQUIREMENTS

Before the commencement of work, Contractor shall submit Certificates of Insurance and Endorsements evidencing that Contractor has obtained the following forms of coverage and minimal amounts specified:

A. MINIMUM SCOPE OF INSURANCE

- 1.) Commercial General Liability coverage (Insurance Services Office (ISO) "occurrence" form CG 0001 1185).]
- 2.) Automobile Liability Insurance – standard coverage offered by insurance carriers licensed to sell auto liability insurance in California. Construction contracts only - Insurance Services Office's Business Auto Coverage form number CA 0001 0187 covering "any auto" and endorsement CA 0029 1288 Changes in Business Auto and Truckers Coverage forms - Insured Contract.
- 3.) Workers' Compensation Insurance as required by the Labor code and Employers Liability insurance
- 4.) Professional Liability Insurance - when the contract involves professional services such as engineering architectural, legal, accounting, instructing, and consulting, professional liability insurance is required.

B. MINIMUM LIMITS OF INSURANCE

- 1.) **General Liability:** At least \$1,000,000 combined single limit **per occurrence** coverage for bodily injury, personal injury and property damage, plus an annual aggregate of at least \$2,000,000. If a general aggregate limit is used, then either the general aggregate limit shall apply separately to this project/location, or the general aggregate limit shall be **twice** the required per occurrence limit. The contractor or contractor's insurance carrier shall notify County if incurred losses covered by the policy exceed 50% of the annual aggregate limit.
- 2.) **Automobile Liability:** At least \$100,000 to cover bodily injury for one person and \$300,000 for two or more persons, and \$50,000 to cover property damages. However, policy limits for construction projects shall be at least \$1,000,000 combined single limit per accident for bodily injury and property damage for autos used by the contractor to fulfill the requirements of this contract, and coverage shall be provided for "Any Auto", Code 1 as listed on the Accord form Certificate of Insurance.
- 3.) **Workers' Compensation and Employer's Liability:** Workers' Compensation insurance up to policy limits and Employer Liability insurance each with policy limits of at least \$1,000,000 for bodily injury or disease.
- 4.) **Professional Liability Insurance (Delete if not contracting for professional services)** Professional liability insurance covering professional services shall be provided in an amount of at least \$1,000,000 per occurrence or \$1,000,000 or on a claims made basis. However, if coverage is written on a claims made basis, the policy shall be endorsed to provide at least a two-year extended reporting provision.

C. DEDUCTIBLES AND SELF-INSURED RETENTIONS.

Any deductibles or self-insured retention must be declared on certificates of insurance and approved by the County. At the option of the County, either the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the County, its officers, officials, employees and volunteers, or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claims administration and defense expenses.

D. OTHER INSURANCE PROVISIONS.

1.) General liability insurance policies shall be endorsed to state:

- a.) The County, its officers, officials, employees and volunteers are to be covered as insured as respects liability arising out of activities performed by or at the direction of the Contractor, including products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the County, its officers, officials, employees or volunteers.
- b.) Contractor's insurance coverage shall be primary insurance as respects the County, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the County, its officers, officials, employees or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
- c.) Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2.) Construction contracts. Construction contracts must also provide an endorsement for Automobile liability insurance, which includes the items listed in D1 above.

E. ACCEPTABILITY OF INSURANCE CARRIERS.

Insurance is to be placed with insurers who are licensed to sell insurance in the State of California and who possess a Best's rating of no less than A-: VII. If the contractor's insurance carrier is not licensed to sell insurance in the State of California, then the carrier must possess a Best rating of at least A: VIII. (For Best ratings go to <http://www.ambest.com/>)

F. VERIFICATION OF COVERAGE.

Contractor shall furnish the County **certificates of insurance** and original **endorsements** affecting coverage required by this clause. All certificates of insurance and endorsements are to be received and approved by the County before work under the contract has begun. The County reserves the right to require complete, certified copies of all insurance policies required by this contract.

Certificates of insurance shall state that the insuring agency agrees to endeavor to mail to County written notice 30 days before any of the insurance policies described herein are cancelled. Contractor agrees to notify County within two working days of any notice from an insuring agency that cancels, suspends, reduces in coverage or policy limits the insurance coverages described herein.

G. SUBCONTRACTORS.

Contractor shall include all subcontractors as insured under its policies or require all subcontractors to be insured under their own policies. If subcontractors are insured under their own policies, they shall be subject to all the requirements stated herein, including providing the County certificates of insurance and endorsements before beginning work under this contract.

ATTACHMENT II

SCOPE OF WORK

Unless indicated otherwise herein, the Contractor shall furnish all labor, materials, transportation, supervision and management, and pay all taxes required to complete the project described below:

Provide Construction Quality Assurance Monitoring and Reporting services during the Construction of the Module 4, Phase D at the Neal Road Recycling and Waste Facility, Butte County, County Project No. 757-5918. The work is described in the document entitled **CONSTRUCTION QUALITY ASSURANCE PLAN**, Module 4, Phase E, Base Liner System, Neal Road Recycling and Waste Facility, Butte County, California as prepared by Golder Associates, dated September 2012 included herein as Attachment IIA.

CONTRACTOR RESPONSIBILITY

Contractor Tasks:

The Contractor shall provide Construction Quality Assurance monitoring and reporting as described in the document entitled **CONSTRUCTION QUALITY ASSURANCE PLAN** attached herein.

Contractor Reports:

The Contractor shall prepare a Final Report following completion of the work. The Final Report will be preceded by a Draft Report submitted to the County for review and comment. The Final Construction Quality Assurance Report shall document that the work was in compliance with the project plans and specifications and meets regulatory requirements.

Contractor Compensation:

The Contractor will be compensated for work completed at the rates submitted in their Cost Estimate which was a component of their Proposal for Construction Quality Assurance Monitoring and Reporting.

COUNTY RESPONSIBILITY

The County shall provide access to the work site and may provide other assistance if determined beneficial to the County.

ATTACHMENT IIA
CONSTRUCTION QUALITY ASSURANCE PLAN

DRAFT



CONSTRUCTION QUALITY ASSURANCE PLAN

CONSTRUCTION QUALITY ASSURANCE PLAN

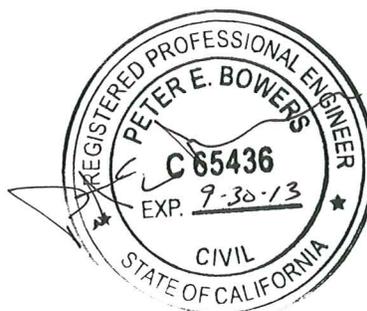
Module 4, Phase E Base Liner System

Neal Road Recycling and Waste Facility

Butte County, California

Submitted To: Butte County
Public Works Department
7 County Center
Oroville, California 95965

Submitted By: Golder Associates Inc.
1000 Enterprise Way
Suite 190
Roseville, CA 95678 USA



September 2012

113-97327

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Table 1 General Fill and Operations Layer Soil Testing Frequency

1.0 INTRODUCTION

This plan addresses the Construction Quality Assurance (CQA) procedures required during the construction of the Module 4, Phase E Base Liner System at the Neal Road Recycling and Waste Facility (NRRWF) in Butte County, California. This CQA Plan establishes procedures to verify that construction is in accordance with the approved engineering standards and specifications, meets the appropriate regulatory requirements, and provides guidance for the CQA Firm to prepare the necessary documentation for submittal to the regulatory agencies.

The objective of this plan is to establish:

- Duties of parties responsible for the CQA program
- Qualification requirements of the Contractors and CQA Engineer(s)
- Inspection activities
- Sampling strategies
- Document control measures
- Procedures for approving the materials purchased for construction
- Methods for assuring compliance to design standards and Project Specifications during construction
- Procedures for resolving issues that may occur concerning the design and construction
- Documentation of construction and testing for submittal to the regulatory agencies for their review

The intent of the CQA Plan is to provide independent third party verification and testing to demonstrate that the Contractors and Installers have met their obligations in the supply and installation of components and materials according to the design documents, Project Specifications, and regulatory requirements. Quality control is provided by the Manufacturers, Installers, and Contractors and refers only to their actions taken to ensure that materials and workmanship meet the requirements of the plans and Project Specifications.

2.0 PARTIES INVOLVED WITH CONSTRUCTION QUALITY ASSURANCE

The following section provides descriptions of the parties referred to in this Construction Quality Assurance Plan (CQA Plan) including their responsibilities and qualifications.

2.1 Owner/Operator

Butte County (County) is the Owner and Operator of this landfill. For the purposes of this CQA Plan and the Project Specifications, all references to the Owner or Operator shall mean the County.

2.2 Project Manager

The Project Manager is the official representative of the Owner and is responsible for construction activities at the facility, including oversight and construction management. The Project Manager is responsible for coordinating construction and quality assurance activities for the project. The Project Manager shall be responsible for the resolution of all quality assurance issues that arise during the liner system construction and must be involved in any decisions that may affect future operations at the landfill.

2.3 Project Engineer

The Design Engineer, also referred to as the "Designer" or "Engineer", is the individual or firm responsible for the design and preparation of the project construction drawings (Drawings) and the technical specifications (Project Specifications). The Designer is responsible for approving all design and project specification changes, modifications, or clarifications encountered during construction. The Design Engineer for the NRRWF, Module 4, Phase E Base Liner System is Golder Associates Inc., Roseville, California. During the course of the project, the Design Engineer shall remain in communication with the Project Manager.

2.4 CQA Engineer and CQA Monitor(s)

The CQA Engineer and CQA Monitors(s) will be responsible for understanding this CQA Plan and shall conduct CQA testing, monitoring, documentation and reporting, as required by this CQA Plan. The CQA Engineer will be the engineer-of-record and will stamp the final report. The implementation and reporting of this CQA Plan shall be conducted under the direct supervision of a State of California registered civil engineer or certified engineering geologist with experience with at least five previous base liner systems similar to that proposed for Module 4, Phase E. The CQA Engineer will communicate directly with the Project Manager.

CQA monitors shall have a minimum experience with at least 3 projects with a combined total of at least 1,000,000 square feet of geosynthetic liner systems similar to that proposed for Module 4, Phase E.

2.5 Geosynthetics Manufacturer

The geosynthetics manufacturer(s), also referred to as the "Manufacturer," is responsible for production of the geosynthetic components outlined in this plan. The Manufacturer may be affiliated with the Geosynthetics Installer. Each Manufacturer must pre-qualify that they are able to produce material that meets the requirements of the Project Specifications. The Geosynthetics Manufacturer will submit materials and documentation to the Project Manager or Geosynthetics Installer.

The geosynthetics manufacturer must meet the qualifications required in the Project Specifications.

2.6 Geosynthetics Installer

The Geosynthetics Installer, also referred to as the "Geosynthetics Installation Contractor" or the "Installer," is responsible for proper installation of the geosynthetic components, in accordance with the Project Drawings and Specifications. The Installer shall also be responsible for procurement of the geosynthetic materials in conformance with the Project Specifications unless otherwise arranged by the Owner. The Installer may be affiliated with the Manufacturer. The Installer will work under subcontract to the Earthworks Contractor.

The Installer must pre-qualify by meeting the requirements outlined in the Project Specifications. The Installer shall provide a qualified Superintendent who will provide full-time technical guidance to the field crew. The Superintendent will represent the Installer at all site meetings and will act as the spokesman for the Installer on the project.

Welding technicians will be evaluated based on performance. The CQA Engineer, through the Project Manager, reserves the right to reject any welding technician whose performance is unsatisfactory.

2.7 Earthworks Contractor

The Earthworks Contractor, also referred to as the "Contractor," is responsible for completion of the site work as defined by contract with the Owner and in accordance with the Drawings and Specifications. The Earthworks Contractor shall have experience with constructing at least two similar base liner projects with a total combined area of at least 300,000 square feet.

The Earthworks Contractor will be responsible for retaining a surveyor to set lines and grades required for excavation and earthfill. The Earthworks Contractor will be contracted with the Owner and will communicate directly with the Project Manager.

2.8 CQA Surveyor

The CQA Surveyor is the firm or individual responsible for performing the quality assurance surveying tasks outlined in this plan including the preparation of stamped as-built survey record drawings to be included in the CQA Certification Report. CQA surveying shall be performed under the direction of a

California State Licensed Land Surveyor. The CQA Surveyor may be contracted with the Earthworks Contractor or the Owner.

2.9 Independent CQA Laboratory

The Independent CQA Laboratory (CQA Lab) is the third party responsible for performing the quality assurance soils and/or geosynthetics laboratory testing tasks listed in this plan in accordance with the specified methodology. Standards for testing include, but are not limited to, American Society for Testing and Materials (ASTM), California Department of Transportation (Caltrans) California Test Methods (CTM), or Geosynthetic Institute (GSI) methods. The CQA Lab is directed by the CQA Engineer and may be affiliated with the CQA Consultant firm or company. The geosynthetics-testing laboratory shall be accredited by the Geosynthetics Accreditation Institute Laboratory Accreditation Program (GAI-LAP). The CQA Lab shall not be affiliated with the Earthworks Contractor or Geosynthetics Installer. The CQA Lab will communicate directly with the CQA Engineer.

3.0 MEETINGS

Meetings shall be held during the life of the project to enhance coordination among the various parties involved. Meetings will include a Pre-Construction Meeting, Progress Meetings and Resolution Meetings if necessary.

3.1 Pre-Construction Meeting

A Pre-Construction meeting will be held at the site prior to the start of construction. The Design Engineer, Project Manager, CQA Monitor, CQA Engineer, Geosynthetics Installer, Earthworks Contractor, and others designated by the Operator shall attend this meeting. The purpose of this meeting will be held to:

- Define lines of communication, responsibility, and authority
- Conduct a site inspection to discuss work areas, work plans, stockpiling, lay-down areas, access roads, haul roads, and related items
- Review the project schedule
- Review the Construction Drawings, CQA Plan, and Project Specifications
- Review work area security and safety protocol

The CQA Engineer or his designee will document this meeting and copies of the meeting minutes will be distributed to all attending parties.

3.2 Progress Meetings

Weekly progress meetings will be held. At a minimum, the CQA Monitor, the CQA Engineer, the Project Manager and the Contractor(s) will attend these meetings. The CQA Monitor is responsible for organizing and conducting the progress meetings. The purpose of these meetings will be to:

- Review the previous week's accomplishments and activities
- Review upcoming scheduled work and project milestones
- Discuss any problems or potential construction problems
- Review the results and status of CQA field and laboratory testing

The CQA Engineer will document these meetings and the minutes shall be transmitted to all in attendance.

3.3 Resolution Meetings

Special meetings will be held, as needed, to discuss and resolve potential problems or deficiencies. At a minimum, these meetings will be attended by the Project Manager, CQA Engineer, CQA Monitor, and the Installer and/or Contractor. If the problem relates to a design issue, the Design Engineer shall also be present. The CQA Monitor will document the meeting.

When deficiencies (items that do not meet project requirements) are discovered, the CQA Monitor or CQA Engineer shall immediately determine the nature and extent of the problem and notify the Installer or

Contractor. If unsatisfactory test results identify a deficiency, additional tests will be performed to define the extent of the deficient material or work area.

The Installer or Contractor shall correct the deficiency to the satisfaction of the CQA Engineer. If unable to correct the problem, the CQA Engineer will notify the CQA Monitor who will assist during problem resolution. If the solution involves a design revision, the Project Manager shall also be contacted. Design revisions can only be made by the Design Engineer.

The corrected deficiency shall be re-tested and/or approved before any subsequent work items are performed by the Installer or Contractor. Retest results shall be recorded by the CQA Monitor and included in the final CQA Report documentation.

4.0 EARTHWORK CONSTRUCTION QUALITY ASSURANCE

Construction of Module 4, Phase E of the NRRWF must be in accordance with the approved Project Drawings and Specifications. This CQA Plan establishes the construction quality assurance monitoring and testing program designed to ensure construction compliance. The earthwork quality assurance testing program consists of testing soil and rock materials used in the module construction. Quality assurance testing and observation is required during construction of the liner system components.

4.1 Construction Monitoring and Testing

All components of the construction shall be observed and tested as required by the CQA Monitor to verify that the construction is in accordance with the Project Specifications. The CQA Engineer shall review the work performed by the CQA Monitor and identify inadequate construction methodologies or materials that may adversely impact the performance of the facility being constructed and/or existing structures. Visual observations and verification of the independent survey required for specific layers throughout the construction process shall be made to evaluate whether the materials are placed to the lines and grades as shown on the Drawings.

The CQA Monitor or CQA Engineer will give the Project Manager sufficient notice of anticipated completion of the construction components so that related CQA documentation may be reviewed and accepted without delay to the contractor. Specific CQA observations and/or testing are required for the following:

- General fill
- Subgrade preparation
- Concrete slope veneer
- Geotextile cushion (Section 5)
- Geosynthetic clay liner (Section 5)
- Geomembrane liner including seams (Section 5)
- Geocomposite layers (Section 5)
- Operations layer

4.1.1 General Earthworks Construction Testing

The general earthworks components of the liner system include the general fill, excavation subgrade, and operations layer materials. Borrow materials will be obtained from excavation, areas designated by the Owner, or off-site quarries. CQA observation and/or testing is required during construction to verify that the materials and construction are in accordance with the Project Specifications. The tests to be performed, including testing frequency, for each material type are presented in Table 1. The testing frequencies specified in Table 1 may be increased when construction conditions warrant additional tests. Additional tests shall be recommended by the CQA Monitor and approved by the CQA Engineer.

TABLE 1
GENERAL FILL AND OPERATIONS LAYER SOILS TESTING FREQUENCY

Test Designation	ASTM Designation	General Fill	Operations Soil Layer
Moisture – Density	D1557	1 Per 10,000 CY Each Material Type	---
Nuclear Moisture-Density ¹	D6938	1 Per 500 CY	---
Sand Cone Test, or Drive Cylinder Test ²	D1556 D2937	1 Per 20 Nuclear Density Tests	---
Moisture Content	D2216/D4643	As Necessary to Check Gauge	1 Per 1,500 CY
Particle Size	D422/D1140	---	1 Per 3,000 CY
Atterberg Limits	D4318	---	---
Soil Classification	D2487/2488	Each Material Type	Each Material Type

Notes to Table 1:

1. Tests shall be performed on an even grid to provide adequate testing coverage. For large fills in small areas, the testing frequency shall be increased as necessary to ensure testing for each lift of soil placed.
2. Drive cylinder test may be performed on fine-grained clay or silt materials only.

4.1.2 Subgrade General Fill and Excavation:

Construction observation and monitoring during subgrade general fill and excavation includes:

- Monitoring fill placement to ensure that the Contractor obtains borrow materials from the approved excavation or stockpile location.
- Observe construction staking to verify that the subgrade is graded to the lines, grades, and elevations shown on the Drawings.
- Verify that fill is placed in loose lifts that result in a nominal compacted thickness of 6 inches.
- Verify that the Contractor adequately moisture conditions the borrow soils.
- Perform field and laboratory testing in accordance with Table 1 to verify that the fill materials are placed to the moisture and density requirements indicated in the Project Specifications.
- Verify that the subgrade preparation/foundation layer materials are suitable for supporting geosynthetic materials.
- Promptly notify the Contractor of test results that affect the work. Notify the Project Manager of construction progress and of the results of all testing. In the event of failing tests, verify that the Contractor adequately reworks the areas which do not meet the Project Specifications.
- Verify that the CQA Survey has been completed and that the Record Drawing furnished by the surveyor indicates compliance with the lines, grades, elevations, and tolerances as indicated by the Project Drawings and Specifications.

4.1.3 Concrete Slope Veneer

Construction observation and monitoring during placement of the concrete slope veneer includes:

- Monitoring placement to ensure that the Contractor properly places concrete slope veneer in the proper locations, to the minimum thickness, and within finishing tolerances.

- Verify the proper concrete mix is used by the Contractor.
- Verify that the Contractor adequately moisture conditions the subgrade.
- Obtain cylinder samples to complete compressive strength tests. Obtain a minimum of one sample per shift or one test per 20,000 SF, whichever is greater.
- Verify that the final surface is suitable for supporting geosynthetic materials.
- Promptly notify the Contractor of test results/observations that affect the work. Notify the Project Manager of construction progress and of the results of all testing. In the event of failing tests, verify that the Contractor adequately reworks the areas which do not meet the Project Specifications.

4.1.4 Operations Layer Placement

Construction observation and monitoring required during operations layer placement includes:

- Observation and monitoring of hauling and spreading equipment to verify that the minimum thickness is maintained between equipment and the HDPE geomembrane.
- Verify the integrity of the underlying geotextile layer by final inspection of all seams and geotextile panels.
- Verify that the operations layer fill materials meet the Project Specifications.
- Observe that operations layer fill materials are pushed upslope on side slope areas.
- Verify that the thickness of operations layer required by the Drawings is achieved.

4.2 CQA Surveying

CQA surveying shall be conducted such that all applicable standards are followed. The CQA Surveyor shall furnish "As-Built Survey Record Drawings" (also referred to as "As-Built Drawings" or "Record Drawings") for review by the CQA Engineer. The CQA Monitor shall also review and approve the drawings prior to placement of a new system component over the work. Required Record Drawings shall be as specified in the Project Specifications. All CQA surveying shall be performed under the direction of a surveyor licensed to perform such work in the State of California. All Record Drawings shall be signed and sealed by the licensed surveyor who directed the CQA survey work. Record drawings shall be at a scale not smaller than 1 inch = 50 feet. The accuracy of the surveying shall be sufficient to determine if the measurements are within the tolerances specified in the Project Specifications and Design Drawings.

The required surveying of liner system elevations shall be carried out on a 50-foot square grid. The grid points for each successive earthworks layer shall have the same horizontal locations for comparison of layer thickness. Additional survey locations shall be recorded to define the following features in the liner system: toe of slope, hinge of slope, grade breaks, anchor trench, drainage system piping, and perimeter drainage ditch (if included in project). The thicknesses of the geosynthetic liner system components on the Design Drawings shall be interpreted as negligible.

5.0 GEOSYNTHETICS CONSTRUCTION QUALITY ASSURANCE

Construction of the specified geosynthetics must be in accordance with the approved Design Drawings and Project Specifications. This Quality Assurance program consists of reviewing Geosynthetics Manufacturer's and Installer's Quality Control submittals, material conformance testing, construction monitoring, and testing.

The types of geosynthetic materials used in this phase of the liner system construction include geomembrane, geotextile, geocomposite, and geosynthetic clay liner. These geosynthetic materials are defined in the Project Specifications. Prior to and during construction, these geosynthetic materials shall be sampled and tested to determine if they conform to Project Specifications. All geosynthetic conformance testing shall be the responsibility of the CQA Engineer.

5.1 Review Quality Control Submittals

Prior to geosynthetic materials installation, the CQA Engineer shall review the Geosynthetic Installation Contractor's Quality Control submittals to confirm that materials meet Project Specifications. The CQA Engineer shall review the following submittals for each geosynthetic material specified for the Project:

- Geosynthetic material samples, name of Manufacturer, and minimum material certifications which shall include the Manufacturer's minimum physical properties of the material, test methods (ASTM and GSI standards) used, and factory and site seaming methods
- Manufacturer's Quality Control Manual followed during the manufacturing process
- The origin (supplier's name and production plant), identification (brand name and lot number) and material properties of the resin used to manufacture the product
- Geosynthetics Installation Contractor's Quality Control Manual, for the installation and testing of the geosynthetics
- Resumes of the Installation Superintendent, Master Seamer, and Seamers to be assigned to this project (geomembrane only)
- Certification that both the Installation Superintendent and the Master Seamer have reviewed this Construction Quality Assurance Plan, Project Specifications and Drawings
- A copy of the Quality Control Certificates on each lot of resin issued by the resin Supplier for the specific material for this project. Geomembrane submittals shall include certification of the resin for extrusion welding rod
- The result of quality control testing conducted on the resin used in manufacturing the specific material for this project
- A listing which correlates the resin to the individual geosynthetic rolls and extruded materials
- A copy of the geosynthetic roll Quality Control Certificates which shall be supplied at a minimum frequency of one (1) per every fifty thousand (50,000) square feet of geosynthetic material continuously produced and supplied to the project unless otherwise presented in the Project Specifications
- A panel layout drawing for geomembrane showing the proposed installation layout identifying field seams as well as any variance or additional details which deviate from the Design Drawings

- A detailed installation schedule for the project
- Certification that the extrusion welding rod to be used is comprised of the same resin type as the geomembrane to be used (geomembrane only)

5.2 Conformance Testing

Prior to geosynthetic installation, the CQA Engineer shall obtain samples of the geosynthetics for conformance testing to evaluate or confirm that these materials meet Project Specifications. Samples may be obtained upon delivery to the project site, or prior to shipping at the Manufacturer's plant (Plant). With approval from the Project Manager, the CQA Engineer may select the rolls to be sampled and request that samples be obtained by the Manufacturer at the Plant. The CQA Monitor or Manufacturer's Representative shall mark the machine direction and roll number on the sample, and date the sample was obtained, and then forward the sample to the geosynthetic laboratory. The conformance testing frequency shall be at a rate of 1 per 150,000 square feet, or one sample per lot, whichever results in the greater number of conformance tests, except for geocomposite, which shall be sampled at a rate of 1 per 250,000 square feet, or one per lot, whichever results in the greater number of conformance tests. Samples shall be taken across the entire width of the roll and shall not include the first 3 feet. The samples shall be a minimum of 3 feet wide by the roll width.

All conformance tests shall be performed in accordance with the Project Specifications. The CQA Engineer shall review the test results and shall report any nonconformance to the Project Manager and the Geosynthetics Installation Contractor.

5.3 Geosynthetics Construction Monitoring and Testing

All geosynthetic components of the construction shall be monitored and tested to verify that the construction is in accordance with the Project Specifications. The CQA Engineer shall identify inadequate construction methodologies or materials that may adversely impact the performance of the facility being constructed and existing structures. Visual observations throughout the construction process shall be made to evaluate whether materials are placed in accordance with the Drawings.

The CQA Monitor shall review the following submittals provided by the Geosynthetics Installer during the project:

- Quality control documentation recorded during installation
- Daily reports detailing arrival and departure times, the personnel present on-site, the progress of the work, the arrival of materials, and any problems encountered
- Subgrade surface acceptance certificates for each area to be covered by the liner system, signed by the Geosynthetics Installation Contractor's Superintendent

The CQA Monitor shall observe and document the geosynthetic installation including:

- Delivery and unloading of geosynthetic materials to the site to verify that the materials are not damaged and are properly labeled

- Obtaining geosynthetic packaging identification slips for verification and generation of an on-site materials inventory
- Subgrade conditions prior to liner installation and verify that any deficiencies (e.g. surface irregularities, protrusions, excessively soft areas, stones, desiccation cracks) noted are corrected
- Verification that the CQA surveyor has verified all lines and grades
- Handling of geosynthetic materials from storage to the work area
- Temporary and permanent anchoring of geosynthetics to verify that design and Project Specifications are met
- Verification that required overlap distances are met

5.3.1 Geomembrane

During geomembrane installation, the CQA Monitor(s) shall observe and document deployment, trial seams, field seaming, non-destructive and destructive seam testing, and repairs to determine whether the installation is in accordance with the Project Specifications.

Storage and Handling - Geomembranes shall be stored at a location selected by the Project Manager. Rolls shall be off loaded using the appropriate equipment and straps. Rolls shall not be placed directly on the ground and shall be stacked no higher than three rolls. Only soft-sole shoes will be allowed on the deployed geomembrane and rub sheets shall be placed under equipment.

Deployment - The CQA Monitor shall verify that only approved materials are used, that each panel is given a unique panel number, that no geomembrane is placed during inclement or unsuitable weather conditions, that the geomembrane is not damaged during installation, that excessive wrinkles are not present, and that anchoring is performed in accordance with the Project Specifications and Design Drawings. The CQA Monitor shall record the deployment on a deployment log form.

Trial Seams - The CQA Monitor shall verify that seaming conditions are adequate, tests are performed at required intervals, specified test procedures are followed, and that re-testing is performed in accordance with the Project Specifications. The Geosynthetic Installer shall perform pre-weld testing at the beginning of each crew shift and immediately following any work stoppage (e.g., for lunch, weather, etc.) of 30 minutes or more. Seaming operation shall not commence until the CQA Monitor has determined that the seaming process meets the Project Specifications. Testing shall include visual observation of a trial seam a minimum of 42 inches long on the geomembrane material. The Installer shall mark the trial seam with date, ambient temperature, welding machine number, welding technician's initials, machine temperature, and speed. For extrusion welding, the Installer shall record the nozzle and extrusion settings and for fusion welding, the wedge temperature and machine speed shall be recorded. A one-foot portion of each trial seam sample shall be archived by the CQA Monitor at the site. The CQA Monitor shall record the trial seam test results on a trial seam log form.

Field Seaming - The CQA Monitor shall verify that only approved equipment and personnel perform welding, all welding is performed under suitable conditions as specified in the Project Specifications, specified overlaps are achieved, seams are oriented in accordance with project requirements, and that grinding techniques and extrudate meet project requirements for extrusion welding. The CQA Monitor shall record all field seaming on the field seaming log forms.

Seaming shall not proceed at an ambient temperature below 32⁰F or above 104⁰F unless the Installer demonstrates he is capable of achieving acceptable results through the utilization of special seaming techniques. Such cold or hot weather seaming shall be proven by an approved program presented in the Project Specifications or presented otherwise by the Design Engineer. If seaming operations are conducted at night, lighting equipment shall be sufficient to allow the Installer and CQA Monitor to adequately and safely perform their duties.

Non-Destructive Seam Continuity Testing - The CQA Monitor shall verify that all seams are non-destructively tested in accordance with the Project Specifications. If the seam cannot be tested, the CQA Monitor shall observe cap strip operations and verify that test equipment and gauges are functioning properly and that test procedures are in accordance with the project requirements. The CQA Monitor shall verify that all failing tests are repaired and re-tested until passing results are achieved. The CQA Monitor shall record all non-destructive test locations on the vacuum test and pressure test log forms.

Destructive Seam Testing - The Geosynthetic Installer shall obtain samples, at locations selected and marked by the CQA Monitor, of the field seamed geomembrane. The samples shall be taken centered over the seam and prioritized as follows:

- All areas identified as suspect during non-destructive testing/monitoring
- Seams that appear suspect to the CQA Monitor
- A minimum of one sample per day
- A minimum of one sample for each geomembrane seaming apparatus
- A minimum of one sample for each representative working conditions (e.g. weather conditions)
- A minimum average of one sample every 500 feet of seaming for each apparatus

Two types of samples shall be obtained at each location. The first sample shall consist of two specimens, each cut approximately 1 inch wide by 8 inches long, taken 48 inches apart. These specimens shall be tested for peel and shear strength in the field by the Installer using a calibrated field tensiometer capable of quantitatively measuring peel and shear strengths. The CQA Monitor shall observe all field tests and record the test results.

If one or both of the specimens fail, the Installer shall take additional test samples 10 feet from the point of the failed test in each direction and repeat the field test procedure. If these additional tests fail, then the procedure shall be repeated until the length of the poor quality seam is established. If the initial field tests

pass, the second type of sample shall be taken between the passing specimens. The second sample type shall be approximately 42 inches along and 12 inches across. The sample shall be divided into three equal sections and distributed and tested as follows:

- one sample - Manufacturer/Installer for their use
- one sample - CQA Monitor for destructive testing
- one sample - CQA Monitor for site archives

Each sample shall be subject to the following destructive tests at an independent CQA Geosynthetics Laboratory or at the CQA Site Office and tested per ASTM D6392 with an appropriately calibrated tensiometer:

- seam shear strength (five tests)
- seam peel strength (five tests)

For fusion seams, one peel strength test refers to testing of both sides of the seam.

Failed destructive tests shall be subject to additional testing until a passing area is found. The Installer shall take another test sample 10 feet from the point of the failed test in each direction and repeat the field test procedure. If subsequent tests fail, then the procedure is repeated until the length of the poor quality seam is established. Once the field tests have passed, a second sample shall be taken between the passing specimens and tested by the Independent CQA Laboratory or by the CQA Engineer. Failed seams shall be tracked according to the welding apparatus and the machine operator. All failed seams shall be bounded by locations from which passing Independent CQA Laboratory tests have been taken.

The Installer shall be responsible for patching all areas cut for test samples in accordance with the Project Specifications and the Manufacturer's recommended procedures, and for non-destructive testing (e.g. vacuum box, etc.) of the patch seams. The CQA Monitor shall record all test locations, results, actions taken in conjunction with destructive test failures, and repairs.

Repairs - The CQA Monitor shall observe and document that all repair materials, techniques, and procedures used for repairs are approved in advance and meet the requirements of the Project Specifications. The CQA Monitor shall verify that all repairs are marked, recorded, repaired, tested, and that wrinkles are addressed, prior to being covered by other materials; and that repairs are performed as specified, including specified type of repair according to type of damage and proper patch size or dimension. The CQA Monitor shall record defects and repairs on a repair log forms.

Acceptance - The CQA Engineer shall approve areas of the geomembrane prior to coverage of the geomembrane by other materials. Acceptance of areas shall follow these procedures:

- As-built panel layout survey
- Full documentation of all seams

- Full documentation of nondestructive testing on all seams and repairs
- Full documentation of repairs on all defects
- Full documentation of passing destructive tests
- A final “walk-over” of the area to observe any subsequent damages or non-addressed items

5.3.2 Geotextile

During geotextile installation, the CQA Monitor shall observe and document deployment, adequate overlap, seaming, and repairs to evaluate whether the installation is in accordance with the Project Specifications.

Deployment - The CQA Monitor shall verify that the underlying layers are clean and free of deleterious materials prior to deployment, and anchoring is achieved as specified. The CQA Monitor shall make observations to inspect for the presence of damaged material or the presence of broken needles used in the manufacturing process.

Seams - The CQA Monitor shall verify sufficient overlap and that the specified seam procedures are followed as required in the Project Specifications.

Repairs - The CQA Monitor shall verify that all repairs are performed in accordance with Project Specifications.

Protection – The CQA Monitor shall verify that deployment methods and equipment do not damage underlying materials. The CQA Monitor shall observe and document that all geotextile materials are covered with the approved material and that traffic or hauling equipment does not damage the geotextile or the overlying materials during installation. In the presence of wind, the geotextile shall be securely anchored with sandbags or equivalent.

5.3.3 Geocomposite

During geocomposite installation, the CQA Monitor shall observe and document deployment, adequate overlap, seaming, and repairs to evaluate whether the installation is in accordance with the Project Specifications.

Deployment - The CQA Monitor shall verify that the underlying layers are clean and free of deleterious materials prior to deployment, and that anchoring is achieved as specified.

Seams and Repairs - The CQA Monitor shall verify sufficient overlap and that the specified seam procedures are followed as required in the Project Specifications. The CQA Monitor shall verify that all repairs are performed in accordance with Project Specifications.

Protection – The CQA Monitor shall verify that deployment methods and equipment do not damage underlying materials. The CQA Monitor shall observe and document that all geocomposite materials are covered with the approved material and that traffic or hauling equipment does not damage the geocomposite during installation or the overlying materials. In the presence of wind, the geocomposite shall be securely anchored with sandbags or equivalent.

5.3.4 Geosynthetic Clay Liner

During geosynthetic clay liner (GCL) installation, the CQA Monitor shall observe and document deployment, adequate overlap, and repairs to evaluate whether the installation is in accordance with the Project Specifications.

Deployment - The CQA Monitor shall verify that the underlying layers are clean and free of deleterious materials prior to deployment, anchoring is achieved as specified, specified methods are used to minimize wrinkles, panels are oriented properly, and stacking procedures are performed according to the Project Specifications.

Seams - The CQA Monitor shall verify sufficient overlap and that the specified seam procedures were followed as required in the Project Specifications.

Repairs - The CQA Monitor shall verify that all repairs are performed in accordance with Project Specifications.

Protection - The CQA Monitor shall observe and document that all GCL materials are promptly covered with the overlying HDPE geomembrane the same day in which the GCL is deployed.

6.0 DOCUMENTATION

An effective Quality Assurance program depends on thorough monitoring and documentation of all construction activities during all phases of construction. Documentation shall consist of daily record keeping, construction problem resolutions, design and specification changes, photographic records, weekly progress reports, chain of custody forms for test sample tracking, and a certification and summary report. During construction, all documentation shall be kept on site and will be available for review by the Project Manager, CQA Engineer, or CQA Monitors.

No section of the liner system may be covered up until the CQA Monitor or CQA Engineer observes, approves, and documents the completed section of the liner system and assures that all requirements have been met by the Contractor or Installer.

6.1 Daily Record Keeping

Daily records shall consist of field notes, observation and testing data sheets, summary of the daily meetings with the Installer and Contractor, and reporting of construction problems and resolutions. This information shall be submitted weekly along with a weekly CQA Summary Report to the CQA Engineer. Copies of all CQA documentation shall be maintained at the site and be made available for review by the Project Manager.

6.2 Soils Observation and Testing Data Sheets

Soils observation and testing data sheets generally include the following information:

- Date, project name, location, and weather data
- A reduced-scale site plan, or full-scale plots, showing work areas and test locations
- Descriptions of ongoing construction
- Summary of test results and samples taken, with locations and elevations
- Off-site materials received including quarry certificates
- Test equipment calibrations, if necessary
- Signature or initials of the CQA Monitor

6.3 Geosynthetic Observation and Testing Forms

Geosynthetic observation and testing forms generally include the following information:

- Date, project name, location, and weather data
- Identification of panel or seam number
- Numbering system identifying test or sample number
- Location and identification of repairs and date of repair
- Length and/or thickness measurements for geosynthetic panels or seams
- Welding machine temperatures and settings

- Welding machine and technician identifications
- Location of tests and test results
- Identification of testing technicians and time of tests
- Signature or initials of the CQA Monitor

6.4 Construction Problem and Resolution Documentation

Any construction problem which cannot be resolved between the Installer, Contractor, and CQA Monitor may require a special meeting in order to resolve the problem. The problem should be discussed with the Project Manager and CQA Engineer, and the Design Engineer if a design issue is involved. Specific written documentation of that problem should be prepared, if warranted, and will generally include the following information:

- Detailed description of the problem
- Location and cause of the problem
- How and when the situation or deficiency was identified
- How the problem was resolved
- Any measures taken to prevent similar problems in the future
- Signature of the CQA Engineer and CQA Monitor

Copies of all Construction Problem and Resolution Sheets requiring a Resolution Meeting will be submitted to the Project Manager.

6.5 Photo Documentation

All phases of construction shall be sufficiently photographed by the CQA Monitor. Photographs shall be identified by separate photographic log by location, time, date, and name of the person taking the photograph. Representative photographs will be included in the certification report.

6.6 Design and Specification Changes

If it is necessary to address design and specification changes, modifications, or clarifications during construction, the CQA Monitor or CQA Engineer will inform the Project Manager, who will notify the Design Engineer. Design and specification changes shall only be made with written agreement from the Project Manager and Design Engineer.

6.7 Certification Report

At the completion of construction, a certification report shall be prepared and signed by the CQA Engineer to certify that the work has been performed in compliance with the Design Drawings and Project Specifications and will contain the following general information:

- Summary of construction activities
- Observation and test data summary sheets

- Sampling, testing locations, and test results
- A description of significant construction problems and the resolution of these problems
- Changes to the Design Drawings or Project Specifications and the justification for these changes
- Record drawings
- A certification statement signed and sealed by a professional civil engineer (PE) or certified engineering geologist (CEG) registered in the State of California, by whom the CQA activities were supervised and work performed in responsible charge

The as-built record drawings shall be prepared by the CQA Surveyor and shall accurately locate all construction items including the lines, grades, and thickness of all soil components for the liner system.

Attachment III

TERMS AND CONDITIONS

1. **Scope of Work.** The work to be undertaken is identified in the attached "Attachment II – Scope of Work" which is made a part of this Contract.
2. **Reimbursement.** The work shall be performed for the Fixed price, Annual price, Monthly price or Hourly rate as indicated above in the variable information table, but shall not exceed the Not-to-Exceed Price if included in the variable information table. Reasonable expenses are authorized in addition to the Hourly Rate if both the Hourly Rate block and the block authorizing Reasonable Expenses are checked in the variable information table. Payment shall be made after the Project Manager or designee reviews and approves the work and after submittal of an invoice by the Contractor.
3. **County Project Manager** The County project manager or designee for this undertaking who will receive payment invoices and answer questions related to the coordination of this undertaking is identified above in the variable information table.
4. **Independent Contractor.** Contractor is an independent contractor, working under his/her own supervision and direction and is not a representative or employee of County. Contractor agrees to file tax returns and pay all applicable taxes on amounts paid pursuant to this Contract.
5. **Confidentiality and Ownership.** The County retains the exclusive right of ownership to the work, products, inventions and confidential information produced for the County by the Contractor, and the Contractor shall not disclose any information, whether developed by the Contractor or given to the Contractor by the County.
6. **Termination.** This Contract may be terminated by either the County or Contractor by a thirty day written notice. Authorized costs incurred by the Contractor will be reimbursed up to the date of termination. Notwithstanding anything stated to the contrary herein, this Contract shall expire on the Completion Date indicated in the above Variable Information Table unless the Completion Date is modified by written amendment to this Contract.
7. **Indemnification.** Contractor agrees to accept responsibility for loss or damage to any person or entity, and to defend, indemnify, hold harmless and release the County, its officers, agents and employees from and against any and all actions, claims, damages, disabilities or expenses that may be asserted by any person or entity, including Contractor, to the extent arising out of or in connection with the negligent acts or omissions or willful misconduct in the performance by Contractor hereunder, whether or not there is concurrent negligence on the part of the County, but excluding liability due to the active negligence or willful misconduct of the County. This indemnification obligation is not limited in any way by any limitation on the amount or type of damages or compensation payable to or for Contractor or its agents under worker's compensation acts, disability benefit acts, or other employee benefits acts. Contractor shall be liable to County for any loss of or damage to County property arising out of or in connection with Contractor's negligence or willful misconduct.
8. **Insurance Requirements.** Contractor shall procure and maintain for the duration of this Contract, insurance against claims for injuries to persons or damages to property which may arise from, or be in connection with the performance of the Work hereunder by Contractor, Contractor's agents, representatives, employees and subcontractors. At the very least, Contractor shall maintain the insurance coverages, limits of coverage, and other insurance requirements as described in Attachment I to this Contract.

9. **Changes to the Contract.** Changes to this Contract may only be approved by written amendment to this Contract.
10. **Contractor's Standard of Care.** County has relied upon the professional ability and training of the Contractor as a material inducement to enter into this Contract. Contractor hereby warrants that all of Contractor's work will be performed in accordance with generally accepted and applicable professional practices and standards as well as the requirements of applicable Federal, State and local laws, it being understood that acceptance of Contractor's work by County shall not operate as a waiver or release.
11. **Termination for Exceeding Maximum Level of Expenditures.** Contracts exceeding the monetary limits delegated to the Purchasing Agent, or authorized deputies, are not valid unless duly executed by the Chair of the Board of Supervisors. If this Contract was executed for the County of Butte by the Purchasing Agent, or authorized deputy, this Contract shall automatically terminate on the date that the provision of services or personal property or incurring of expenses, the cumulative total of which, exceeds the amount prescribed by Government Code Section 25502.5 for personal services contracts or the amount prescribed by Public Contract Code Section 22032 (b) for public works contracts.
12. **Termination for Exceeding Maximum Term.** Contracts exceeding the three year term delegated to the Purchasing Agent, or authorized deputies, are not valid unless duly executed by the Chair of the Board of Supervisors. If this Contract was executed for the County of Butte by the Purchasing Agent, or authorized deputy, this Contract shall automatically terminate on the date that the term exceeds three years. Amendments to this Contract, or new Contracts for essentially the same purpose, shall not be valid beyond the three year limitation unless duly executed by the Chair of the Board of Supervisors.
13. **Compliance with Laws.** Contractor shall comply with all Federal, State and local laws, rules and regulations including, without limitation, any nondiscrimination laws.
14. **Applicable Law and Forum.** This Contract shall be construed and interpreted according to California law and any action to enforce the terms of this Contract for the breach thereof shall be brought and tried in the County of Butte.
15. **Contradictions in Terms and Conditions.** In the event of any contradictions in the terms and/or conditions of this Contract, these Attachment III TERMS AND CONDITIONS shall prevail.
16. **No Delegation or Assignment:** Provider shall not delegate, transfer or assign its duties or rights under this Agreement, either in whole or in part, directly or indirectly, by acquisition, asset sale, merger, change of control, operation of law or otherwise, without the prior written consent of County and any prohibited delegation or assignment shall render the contract in breach. Upon consent to any delegation, transfer or assignment, the parties will enter into an amendment to reflect the transfer and successor to Provider. County will not be obligated to make payment under the Agreement until such time that the amendment is entered into.