



332-S1210

**Agreement No. 012E-A-11/12-PA
Between the
County of El Dorado and
Dunn Environmental, Inc.**

THIS AGREEMENT NO. 012E-A-11/12-PA made and entered by and between the County of El Dorado, a political subdivision of the State of California (hereinafter referred to as "County"), acting by and through County Service Area No. 10, a lawfully established County Service Area as defined by Government Code Section 25210 et seq., and Dunn Environmental, a Corporation duly qualified to conduct business in the State of California, whose principal place of business is 5060 Robert J. Mathews Parkway, Suite 2, El Dorado Hills, California 95672 (hereinafter referred to as "Consultant").

WITNESSETH

WHEREAS, County has determined that it is necessary to obtain a Consultant to provide the required per event landfill gas field monitoring, as documented in Section 2.2 of the Operations, Maintenance and Monitoring Plan (OMMP), attached here as Exhibit "A", located at the Meyers Landfill for the Environmental Management Department; and

WHEREAS, Consultant has represented to County that it is experienced and competent to perform the special services required hereunder and County has determined to rely upon such representations; and

WHEREAS, it is the intent of the parties hereto that such services are in conformity with all applicable federal, state and local laws; and

WHEREAS, County has determined that the provisions of such services provided by Consultant are in the best interest of the public, and are more economically and feasibly performed by outside independent consultants as well as authorized by El Dorado County Charter, Section 210 (b) (6) and/or Government Code 31000;

NOW, THEREFORE, County and Consultant mutually agree as follows:

ARTICLE I

Scope of Services: Consultant shall perform all professional and technical services and shall make available Consultant's own personnel, materials and equipment necessary to perform the services and work for one year, designated as outlined in Exhibit "B" marked "Scope of Services" incorporated herein and made by reference a part hereof (hereinafter referred to as "Work").

ARTICLE II

Standards for Work: Consultant will strive to perform services in a manner consistent with that level of care and skill ordinarily exercised by other members of the Consultant's profession currently practicing in the same locality and under similar conditions. No other representation, express or implied, is included or intended in this agreement, or in any report, opinion, document, or other instrument of service.

ARTICLE III

Term: This Agreement shall become effective when fully executed by both parties hereto and shall expire in **One (1) year** from the date of execution thereof.

ARTICLE IV

Compensation for Services: County promises and agrees to pay the Consultant for satisfactory performance under Exhibit "B", the "Scope of Services". The total payment under this Agreement to Contractor SHALL NOT EXCEED **Forty Five Thousand Eight Hundred Dollars and No Cents (\$45,800.00)**. Payment shall be made within forty-five days following County's receipt and approval of invoice(s) detailing a description of "Work" performed in accordance with Exhibit "B", the "Scope of Services."

ARTICLE V

Consultant Reporting: Reports on Services rendered by Consultant shall be submitted to County in the format, and under the conditions, outlined in the "Work."

ARTICLE VI

Deliverables: Deliverables will be specified by the County for each individual assignment, and specific assignments and "Work" requirements will be specifically identified. Failure to submit requested deliverables shall be grounds for termination of the Agreement, as provided in Article XIII.

ARTICLE VII

Ownership of Data: Upon completion or earlier termination of all "Work" under this Agreement, ownership and title to all reports, documents, plans, (including digitized plans) specifications and estimates produced as part of this Agreement will automatically be vested in the County and no further Agreement will be necessary to transfer ownership to the County. The Consultant shall furnish the County all necessary copies of data needed to complete the review and approval process. Any reuse of such materials shall be done at the sole risk of the County.

ARTICLE VIII

Changes to Agreement: This Agreement may be amended by mutual consent of the parties hereto. Said amendments shall become effective only when in writing and fully executed by duly authorized officers of the parties hereto. There shall be no change in the Consultant's Administrator or sub consultants without prior written approval by the County's Administrator.

ARTICLE IX

Consultant to County: It is understood that the services provided under this Agreement shall be prepared in and with cooperation from County and its staff. It is further agreed that in all matters pertaining to this Agreement, Consultant shall act as Consultant only to County and shall not act as Consultant to any other individual or entity affected by this Agreement nor provide information in any manner to any party outside of this Agreement that would conflict with Consultant's responsibilities to County during term hereof.

ARTICLE X

Assignment and Delegation: Consultant is engaged by County for its unique qualifications and skills as well as those of their personnel. Consultant shall not sub contract, delegate, or assign services to be provided, in whole or in part, to any other person or entity without prior written consent of County.

ARTICLE XI

Independent Consultant/Liability: Consultant is, and shall be at all times, deemed independent and shall be wholly responsible for the manner in which it performs services required by terms of this Agreement. Consultant exclusively assumes responsibility for acts of its employees, associates, and sub consultants, if any are authorized herein, as they relate to services to be provided under this Agreement during the course and scope of their employment.

Consultant shall be responsible for performing the "Work" under this Agreement in a safe, professional, skillful and a workmanlike manner and shall be liable for its own negligence and negligent acts of its employees and sub consultants. County shall have no right of control over the manner in which "Work" is to be done and shall, therefore, not be charged with responsibility of preventing risk to Consultant or its employees or sub consultants.

ARTICLE XII

Fiscal Considerations: The parties to this Agreement recognize and acknowledge that County is a political subdivision of the State of California. As such, El Dorado County is subject to the provisions of Article XVI, Section 18 of the California Constitution and other similar fiscal and procurement laws and regulations and may not expend funds for products, equipment or services not budgeted in a given fiscal year. It is further understood that in the normal course of County business, County will adopt a proposed budget prior to a given fiscal year, but that the final adoption of a budget does not occur until after the beginning of the fiscal year.

Notwithstanding any other provision of this Agreement to the contrary, County shall give notice of cancellation of this Agreement in the event of adoption of a proposed budget that does not provide for funds for the services, products, or equipment subject herein.

Such notice shall become effective upon the adoption of a final budget, which does not provide funding for this Agreement. Upon the effective date of such notice, this Agreement shall be automatically terminated and County released from any further liability hereunder.

In addition to the above, should the Board of Supervisors during the course of a given year for financial reasons reduce, or order a reduction in, the budget for any County department for which services were agreed to be performed, pursuant to this paragraph in the sole discretion of the County, this Agreement may be deemed to be canceled in its entirety subject to payment for services performed prior to cancellation.

ARTICLE XIII

Default, Termination, and Cancellation:

- A. **Default:** Upon the occurrence of any default of the provisions of this Agreement, a party shall give written notice of said default to the party in default (notice). If the party in default does not cure the default within ten (10) days of the date of notice (time to cure), then such party shall be in default. The time to cure may be extended in the discretion of the party giving notice. Any extension of time to cure must be in writing, prepared by the party in default for signature by the party giving notice and must specify the reason(s) for the extension and the date in which the extension of time to cure expires.

Notice given under this section shall specify the alleged default and the applicable Agreement provision and shall demand that the party in default perform the provisions of this Agreement within the applicable period. No such notice shall be deemed a termination of this Agreement unless the party giving notice so elects in this notice, or the party giving notice so elects in a subsequent written notice after the time to cure has expired.

- B. **Bankruptcy:** This Agreement, at the option of the County, shall be terminable in the case of bankruptcy, voluntary or involuntary, or insolvency of Consultant.

- C. **Ceasing Performance:** County may terminate this Agreement in the event Consultant ceases to operate as a business, or otherwise becomes unable to substantially perform any term or condition of this Agreement.
- D. **Termination or Cancellation without Cause:** County may terminate this Agreement in whole or in part seven (7) calendar days upon written notice by County for any reason. If such prior termination is effected, County will pay for satisfactory services rendered prior to the effective dates as set forth in the Notice of Termination provided to Consultant, and for such other services, which County may agree to in writing as necessary for Agreement resolution. In no event, however, shall County be obligated to pay more than the total amount of the Agreement. Upon receipt of a Notice of Termination, Consultant shall promptly discontinue all services affected, as of the effective date of termination set forth in such Notice of Termination, unless the notice directs otherwise. In the event of termination for default, County reserves the right to take over and complete the "Work" by Agreement or by any other means.

ARTICLE XIV

Notice to Parties: All notices to be given by the parties hereto shall be in writing and served by depositing same in the United States Post Office, postage prepaid and registered. Notices to County shall be in duplicate and addressed as follows:

County of El Dorado
Environmental Management Department
Attention: Greg Stanton, Deputy Director
2850 Fairlane Ct., Building C
Placerville, CA 95667

or to such other location as the County directs.

Notices to Consultant shall be addressed as follows:

Dunn Environmental, Inc.
Attention: Patrick F. Dunn
5060 Robert J. Mathews Pkwy, Suite 2
El Dorado Hills, CA 95762

ARTICLE XV

Indemnity: The Consultant shall defend, indemnify, and hold the County harmless against and from any and all claims, suits, losses, damages and liability for damages of every name, kind and description, including attorney's fees and costs incurred, brought for, or on account of, injuries to or death of any person, including but not limited to workers, County employees, and the public, or damage to property, or any economic or consequential losses, which are claimed to or in any way arise out of or are connected with the Consultant's services, operations, or performance hereunder, regardless of the existence or degree of fault or negligence on the part of the County, the Consultant, sub consultant(s) and employee(s) of any of these, except for the sole, or active negligence of the County, its officers and employees, or as expressly prohibited by statute. This duty of Consultant to indemnify and save County harmless includes the duties to defend set forth in California Civil Code Section 2778.

ARTICLE XVI

Insurance: Consultant shall provide proof of a policy of insurance satisfactory to the El Dorado County Risk Manager and documentation evidencing that Consultant maintains insurance that meets the following requirements:

- A. Full Worker's Compensation and Employer Liability Insurance covering all employees of Consultant as required by law in the State of California.
- B. Commercial General Liability Insurance of not less than One Million Dollars (\$1,000,000) combined a single limit per occurrence for bodily injury and property damage.
- C. Automobile Liability Insurance of not less than One Million Dollars (\$1,000,000) is required in the event motor vehicles are used by the Consultant in the performance of the Agreement.

- D. In the event Consultant is a licensed professional, and is performing professional services under this Agreement, professional liability (for example, malpractice insurance) is required with a limit of liability of not less than One Million Dollars (\$1,000,000) per occurrence.
- E. Consultant shall furnish a certificate of insurance satisfactory to the El Dorado County Risk Manager as evidence that the insurance required above is being maintained.
- F. The insurance will be issued by an insurance company acceptable to the Risk Management Division, or be provided through a partial or total self-insurance likewise acceptable to Risk Management.
- G. Consultant agrees that the insurance required above shall be in effect at all times during the term of this Agreement. In the event said insurance coverage expires at any time or times during the term of this Agreement, Consultant agrees to provide at least thirty (30) days prior to a said expiration date, a new certificate of insurance evidencing insurance coverage as provided for herein for not less than the remainder of a term of the Agreement, or for a period of not less than one (1) year. New certificates of insurance are subject to the approval of the Risk Management Division and Consultant agrees that no Work or services shall be performed prior to the giving of such approval. In the event the Consultant fails to keep in effect at all times insurance coverage as herein provided, County may, in addition to any other remedies it may have, terminate this Agreement upon the occurrence of such events.
- H. The certificate of insurance must include the following provisions stating that:
1. The insurer will not cancel the insurance coverage without thirty (30) days prior written notice to County, and;
 2. The County of El Dorado, its officers, officials, employees, and volunteers are included as additionally insured, but only insofar as the operations under this Agreement are concerned. This provision shall apply to all

liability policies except workers' compensation and professional liability insurance policies.

- I. The Consultant'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 Consultant's insurance and shall not contribute with it.
- J. Any deductibles or self-insured retention must be declared to and approved by 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 Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.
- K. Any failure to comply with the reporting provisions of the policies shall not affect coverage provided to the County, its officers, officials, employees, or volunteers.
- L. The insurance companies shall have no recourse against the County of El Dorado, its officers and employees or any of them for payment of any premiums or assessments under any policy issued by any insurance company.
- M. Consultant's obligations shall not be limited by the foregoing insurance requirements and shall survive expiration of this Agreement.
- N. In the event Consultant cannot provide an occurrence policy, Consultant shall provide insurance covering claims made as a result of performance of this Agreement for not less than three (3) years following completion of performance of this Agreement.
- O. Certificates of insurance shall meet such additional standards as may be determined by the contracting County Department either independently or in

consultation with the Risk Management Division, as essential for protection of the County.

ARTICLE XVII

Interest of Public Official: No official or employee of County who exercises any functions or responsibilities in review or approval of services to be provided by Consultant under this Agreement shall participate in or attempt to influence any decision relating to this Agreement which affects personal interest or interest of any corporation, partnership, or association in which he/she is directly or indirectly interested; nor shall any such official or employee of County have any interest, direct or indirect, in this Agreement or the proceeds thereof.

ARTICLE XVIII

Interest of Consultant: Consultant covenants that Consultant presently has no personal interest or financial interest, and shall not acquire same in any manner or degree in either: 1) any other Agreement connected with or directly affected by the services to be performed by this Agreement; or, 2) any other entities connected with or directly affected by the services to be performed by this Agreement. Consultant further covenants that in the performance of this Agreement no person having any such interest shall be employed by Consultant.

ARTICLE XIX

Withholding (Form 730): In accordance with changes in Internal Revenue Law, OASDI (Old Age, Survivors, & Disability Insurance) and income taxes may be withheld from any payments made under terms of this Agreement if Consultant falls under "Contract-Employee" category as determined by County prior to execution of Agreement.

ARTICLE XX

California Residency (Form 590): All independent Consultants providing services to the County must file a State of California Form 590, certifying their California residency or, in the case of a corporation, certifying that they have a permanent place of business

in California. The Consultant will be required to submit a Form 590 prior to execution of an Agreement or County shall withhold seven (7) percent of each payment made to the Consultant during the term of the Agreement. This requirement applies to any agreement/contract exceeding \$1,500.00.

ARTICLE XXI

Tax Payer Identification Number (Form W-9): All independent Consultants or Corporations providing services to the County must file a Department of the Treasury Internal Revenue Service Form W-9, certifying their Taxpayer Identification Number.

ARTICLE XXII

California Forum and Law: Any dispute resolution action arising out of this Agreement, including, but not limited to, litigation, mediation, or arbitration, shall be brought in El Dorado County, California, and shall be resolved in accordance with the laws of the State of California. Consultant waives any removal rights it might have under Code of Civil Procedure Section 394.

ARTICLE XXIII

Administrator: The County Officer or employee with responsibility for administering this Agreement is Greg Stanton, Deputy Director, or his successor.

ARTICLE XXIV

Authorized Signatures: The parties to this Agreement represent that the undersigned individuals executing this Agreement on their respective behalf are fully authorized to do so by law or other appropriate instrument and to bind upon said parties to the obligations set forth herein.

ARTICLE XXV

Partial Invalidity: If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will continue in full force and effect without being impaired or invalidated in any way.

ARTICLE XXVII

Confidentiality: Consultant shall maintain the confidentiality and privileged nature of all records together with any knowledge therein acquired, in accordance with all applicable State and Federal laws and regulations, as they may now exist or may hereafter be amended or changed. Consultant, and all Consultant's staff, employees and representatives, shall not use or disclose, directly or indirectly at any time, any said confidential information, other than to the County Environmental Management Department for the purpose of, and in the performance of the Agreement. This confidentiality agreement shall survive after the expiration or termination of this Agreement.

ARTICLE XXIII

Entire Agreement: This document and the documents referred to herein or exhibit(s) hereto is the entire Agreement between the parties and they incorporate or supersede all prior written or oral Agreements or understandings.

REQUESTING DEPARTMENT CONCURRENCE:

By: Gerri Silva
Gerri Silva, M.S., REHS
Director, Environmental Management

Dated: January 11, 2012

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first below written.

- - COUNTY OF EL DORADO - -

Dated: 1/25/12


By: [Signature]
Purchasing Agent
Chief Administrative Office
"County"

- - CONSULTANT - -

Dated: 1/4/12

By: Patrick F. Dunn
Patrick F. Dunn, President
Dunn Environmental, Inc.

CONTRACT ADMINISTRATOR CONCURRENCE:

By: 
Greg Stanton, REHS
Deputy Director, Environmental Management

Dated: 1-11-12

APPENDIX P
OPERATION MAINTENANCE AND MONITORING PLAN
(OMMP)

**REMEDIAL ACTION WORK PLAN
APPENDIX P**

**OPERATION MAINTENANCE AND
MONITORING PLAN**

Meyers Landfill OU-1
El Dorado County, California

JUNE 2010

Prepared For:

El Dorado County
Environmental Management Department
2850 Fairlane Court
Placerville, California 95667

Submitted To:

USDA Forest Service
Lake Tahoe Basin Management Unit
35 College Drive
South Lake Tahoe, California 96150

Prepared By:

BAS
BRYAN A. STIRRAT & ASSOCIATES
1360 Valley Vista Drive
Diamond Bar, California 91765
(909) 860-7777

**MEYERS LANDFILL
REMEDIAL ACTION WORK PLAN
APPENDIX P
OPERATION MAINTENANCE AND MONITORING PLAN**

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1.0 INTRODUCTION

Bryan A. Stirrat & Associates has prepared this updated Operations, Maintenance, and Monitoring Plan (OMMP) as part of the Remedial Action Work Plan (RAWP) for implementation of the Remedial Design (RD) for Operable Unit (OU)-1, the Meyers Landfill Site, in El Dorado County, California, developed under the U.S. Department of Agriculture Forest Service (Forest Service). This updated plan has been created from the original OMMP prepared by Engineering/Remediation Resources Group, Inc. (ERRG) and included in the RD. This OMMP includes requirements for (1) the new cap system for the landfill, (2) a new french drain, and (3) a new passive landfill gas (LFG) emissions control system and perimeter LFG monitoring network, and (4) the remaining groundwater wells within OU-1. The RD for OU-1 was based on the remedy (Alternative 3) selected in the Supplemental Remedial Investigation/Feasibility Study (RI/FS) Report (Weston Solutions, Inc., 2007) and documented in the Record of Decision (ROD) for OU-1 (U.S. Department of Agriculture Forest Service [Forest Service], 2007).

The selected remedy meets the following remedial action objectives (RAOs) for OU-1:

- Landfill area: Protection of humans and wildlife from exposure to landfill refuse and soil contamination by eliminating exposure pathways and contaminant migration.
- Source area groundwater: Minimization of the effects of landfill refuse and soil contaminants on groundwater quality (e.g., rainwater infiltration) and rainwater runoff.
- LFG: Protection of humans and wildlife by minimizing exposure pathways and gas migration.

This OMMP has been prepared to ensure compliance with the substantive requirements of Title 27 of the California Code of Regulations (CCR) relating to post-closure maintenance of the landfill cover and gas monitoring. This OMMP will be amended, as needed, following construction of the designed final landfill cap.

1.1. Operations, Maintenance, And Monitoring Approach

The OM&M program will primarily involve the evaluation of the performance of the final cap, stormwater and drainage controls, and LFG control system and monitoring network, as well as the continued execution of established groundwater well monitoring and inspection. The OM&M program will include the following activities:

- Inspect the landfill cap
- Inspect the surface water control system, storm water controls, and french drain
- Inspect and monitor the passive gas extraction and perimeter gas monitoring systems
- Inspect and maintain the OU-1 groundwater well system
- Maintenance, as needed based on site inspection results

All site inspection activities will be documented on inspection forms (see Attachments P1, P2, and P3), field log forms, and photographic logs.

1.2. Identification Of Parties And Their Duties

Located on National Forest System lands, the landfill operated from 1947 to 1971 under a series of Forest Service Special Use Permits that were issued to multiple private parties and El Dorado County (County). El Dorado County currently owns the landfill. Prior to and following completion of remedial design implementation at the site, the Forest Service will maintain full responsibility for all inspections, monitoring, and maintenance activities.

Contact information for the Forest Service and County is as follows:

Landfill Owner

El Dorado County
2850 Fairlane Court, Building "C"
Placerville, CA 95667
Mr. Greg Stanton, (530) 621-6658

Property Owner and Lead Agency

USDA Forest Service Region 5
Tahoe National Forest
631 Coyote Street
Nevada City, CA 95959
(530) 478-6192

1.3. Revision Of Documents

The OMMP will be revised when a significant change occurs or when requested by the Forest Service, or the County. The Forest Service, County, and/or other regulatory agencies will be informed if maintenance or monitoring changes occur that require OMMP modifications. All revisions to the approved OMMP will be completed in accordance with 17 CCR and 27 CCR and are subject to approval by the Forest Service and County.

In accordance with the Meyers Landfill Statement of Work, a final OMMP will update this interim OMMP and will address any design modifications that were implemented during remedial action and will incorporate the as-built plans and specifications and manufacturer/vendor information and procedures for all products installed during the remedial action.

The following procedure addresses drafting, revising, approving, and issuing a revision to this interim OMMP.

1. All or a part of the OMMP may be revised at any time if required.
2. If the body of the OMMP is revised, compile and issue a revision of the OMMP which notes the number of the revision (i.e., fourth, fifth, etc.) and the date of the revision. Describe the history of the revision in the OMMP.
3. If only an Appendix, Table, or Figure is revised and it is not necessary to revise the body of the OMMP, note the revision number and date only on the revised Appendix, Table, or Figure.
4. Submit all draft revisions to the Forest Service and County for approval.
5. Do not implement draft revisions. Draft revisions are for review only. Finalize the draft revision when it is approved by the relevant regulatory agencies.
6. Implement final revisions as approved by the relevant regulatory agency
7. Change of ownership of the landfill shall be reported to appropriate regulatory agencies.

2.0 OPERATIONS, MAINTENANCE, AND MONITORING PROCEDURES

The following sections discuss the procedures required to ensure maintenance of the cap, record-keeping, and health and safety protocols. A summary of OM&M monitoring requirements, including action items and responses, is presented in Table P-1.

2.1 Site Inspections

Quarterly inspections of the landfill cap will be conducted by a qualified engineer under the direct supervision of a California-registered Professional Engineer to evaluate the integrity of the cover system, the drainage control system, and the stormwater system. Site inspections will be conducted in conjunction with performance monitoring of the LFG system. A land use control inspection will be conducted once per year during one of the inspection events. In addition, the site will be inspected after any major storm event, significant seismic event, flood, fire, or other catastrophic event that could adversely affect the cap system or site features (see Section 3 for a description of catastrophic events warranting a site inspection). A general site inspection checklist to be completed during each inspection is included in Attachment P1. A step-by-step series of inspection procedures is described in Section 2.1.1. Table P-1 summarizes all required inspection items and response actions for required maintenance.

Every 5 years, a licensed professional land surveyor will conduct a topographic survey of the landfill site to evaluate settlement of the landfill cap. The topographic survey will tie in to the two permanent survey monuments (settlement markers) installed on the cap immediately following construction. Results of the survey will be used to evaluate the elevation of waste and LFG control system components to determine whether settlement has adversely affected any critical components of the cap or LFG control system and monitoring network.

The landfill site should be visually inspected to ensure the following conditions are maintained at the site:

- Proper warning signs are present
- Protective fences or cages are in good condition and secured

- LFG vents, perimeter LFG monitoring points, and groundwater monitoring well surface completions and casings are in good condition
- No large trees, brush, or weeds (with deep taproots) are present on the cap that may penetrate the cap
- No noxious weeds or non-native invasive species (NNIS) have been established on the cap
- No soil erosion is evident at the site (on the cap or in areas adjacent to the cap)
- No rodent burrows or other disturbances to the cap surface are evident
- Any erosion control facilities are intact, including, but not limited to, silt fences, hay bales, fiber rolls, and gravel or sandbags
- No noticeable depressions or ponded water are present on the cap
- No noticeable sliding (slope failure) or desiccation cracks are present in the soil cover
- The landfill cap is not protruding, exposed, or torn
- The LFG passive vents and turbine vents are in good working order

The surface water control system will be visually inspected. The visual inspection will identify any accumulation of debris, silt, or sediment that could impede runoff from the cap, block culverts, or contribute to cap erosion. The lined drainage channels will be inspected for cracks or other signs of damage that may allow excessive infiltration of surface water in areas upgradient from or within the groundwater plume (OU-2). All drainage channels will also be inspected for ponding conditions or other types of grading-related impedances of flow.

The french drain will be inspected in conjunction with the general site inspections. Particular attention will be paid to outflow from the drain during the spring inspection. The primary goal of this inspection will be to establish that flow is emerging from the drain, and that the drain is functioning properly.

A botanist or equally competent person will conduct vegetative cover inspections on the cap and at areas adjacent to the cap at least twice per year in late spring and early fall. These inspections are conducted to ensure that proper vegetation growth prevents soil erosion and does not damage the geosynthetic membrane. A vegetative cover inspection

checklist is provided in Attachment P2. The vegetative cover should be inspected for the following:

- Areas of stressed or missing vegetation
- Areas of continual poor growth despite reseeding efforts
- Noxious weeds, NNIS, or deep-rooting species on the cap (a list of invasive species of concern is included in Table P-2. Additional details on these species are presented in Attachment P2)
- Effects to vegetation from burrowing animals on the cap
- Maturity of seeds to allow for mowing

The inspection requirements are included in Table P-1. Table P-2 presents a list of native species that have been approved by the Forest Service for growth on the cap and lists noxious weeds and NNIS that should be kept off the cap. The seed mix that will be applied to the cap following construction will consist of some of the approved native species. The exact seed mix will be determined in consultation with the Forest Service's botanist and will be developed upon testing of the final cover soil vegetative layer as part of RD implementation. The list of species in Table P-2 of this OMMP will be updated in accordance with above Section 1.3, Revision of Documents, following submittal and Forest Service approval of the final seed mix. Inspections conducted within the first year after construction completion should also include monitoring construction work areas, such as the borrow area, for newly established noxious weeds or NNIS.

2.1.1 Inspection Procedures

This section describes the general procedures for performing a site inspection. A site inspection checklist will be completed during each quarterly inspection using the inspection form provided in Attachment P1. All site inspection activities will be photographed, and any areas requiring action will be clearly shown on site maps and drawings. Each step of a site inspection is summarized below.

1. Arrive at site access gate. Note any signs of disturbance or tampering with the padlocked gates located at the entry points to the site.

2. Walk the perimeter of the site, outside the landfill footprint, along the boundary of the area requiring institutional controls (see Drawing 8, Appendix A). Note any missing or damaged signage.
3. Walk the perimeter of the landfill, just outside the landfill footprint. Look for any signs of sloughing or sliding of the cap material. Identify any cracks and signs of erosion. Locate any signs of burrowing. Check for exposed geosynthetics (e.g., geogrid, geocomposite drainage layer, or linear low-density polyethylene [LLDPE] material).
4. Traverse the landfill in passes spaced approximately 50 feet apart. Observe and note cover conditions across the entire cap. Look for any signs of sloughing or sliding of the cap material. Identify any cracks or visible signs of erosion. Look for signs of burrowing mammals. Check for exposed geosynthetics (e.g., geogrid, geocomposite drainage layer, or LLDPE material). Note any missing or patchy vegetation, excessively dry vegetation, areas of continual poor vegetative growth, noxious weeds, non-native invasive species, or oversized vegetation such as brush or bushes. Check for low spots or signs of ponding.
5. Walk along each of the drainage channels. Check lined channels for cracks or other signs of physical damage. Inspect all channels for damage, silt buildup, and debris. Note any signs of excess erosion along edges of channels.
6. Check french drain outfall. Note whether water appears to freely exit from the outfall pipe. Note any visible blockage of water flow.
7. Inspect check dams. Locate any damage to gabion baskets or rock piles.
8. Walk along perimeter of sediment and infiltration basins. Note any signs of flow out of the basins. Check for excessive sediment buildup.
9. Check LFG vents, LFG perimeter monitoring points, and groundwater monitoring wells for signs of damage or vandalism and to ensure their integrity.¹ Inspect caged enclosures for signs of physical damage to their integrity, locks, or stabilizing guy wires.
10. Inspect permanent survey monuments on the cap for signs of damage or vandalism.

¹ Note: Groundwater monitoring well inspections will also be conducted as part of the regular groundwater monitoring activities for OU-2, but any damage should be noted in the "additional notes" section of the general inspection form (Attachment P1).

2.2 Landfill Gas Vent And Monitoring Point Sampling

LFG vents will be sampled monthly for the first 2 years and quarterly thereafter. LFG perimeter monitoring points will be sampled quarterly in accordance with standards outlined in 27 CCR Section (§) 20933². Sampling frequencies may be reevaluated and adjusted following the first 2 years, once an adequate database has been established. If the perimeter monitoring data indicate that LFG is not migrating away from the landfill, less frequent monitoring at perimeter points may be proposed.

The landfill gas control system will be inspected during each sampling event. The inspection will entail a visual inspection of the aboveground vents and the surface above all underground conveyance pipes. The surface conditions above the pipes will be inspected for depressions or soft spots that could indicate pipeline damage. The visual inspection of the aboveground vents will include the standpipe, turbine vent, valve, and sample port conditions, as outlined in Table P-1.

LFG samples will be collected from gas vents and perimeter points in the field and tested with a direct-read device and will be sent to a laboratory for analysis. All samples will be analyzed for methane, carbon dioxide, oxygen, and hydrogen sulfide gases (using field instruments) and for volatile organic compounds (VOCs), permanent and fixed gases, and sulfur compounds (by laboratory methods). As indicated in the RI/FS Report and ROD for this project (Weston Solutions, Inc., 2007; Forest Service, 2007), no active LFG treatment system is included as part of the RD. Sample results will be evaluated following a maximum of 1 year of sampling to determine whether a gas treatment system is required. Treatment will be required if, after 1 year of sampling, concentrations of chemicals in gas samples consistently exceed appropriate state and federal criteria. The U.S. Environmental Protection Agency (EPA) has established federal regional screening levels (RSLs) for concentrations in industrial and residential air (EPA, 2009). For this project, industrial air standards are appropriate. El Dorado County Air Quality Management District ambient air quality standards are consistent with the concentrations presented in CCR (as cited in the table below). The following table summarizes the current standards for vinyl chloride, methane, and hydrogen sulfide that will be used to evaluate landfill gas concentrations.

² <http://www.ciwmb.ca.gov/regulations/Title27/ch3sb4b.htm>

Chemical	Screening Levels	Criteria citation
Vinyl chloride	2.8 $\mu\text{g}/\text{m}^3 \text{ h}$ 0.010 ppm (or 25.6 $\mu\text{g}/\text{m}^3$) in a 24-hour period	EPA 2009 (RSL for industrial air) ^a 17 CCR § 70200 ^b
Methane	No more than 5 percent by volume will migrate off site	27 CCR § 20921a ^c
Hydrogen sulfide	8.8 $\mu\text{g}/\text{m}^3$ 0.03 ppm (or 42 $\mu\text{g}/\text{m}^3$) in a 24 hour period	EPA 2009 (RSL for industrial air) ^a odor threshold, 17 CCR § 70200 ^b

Note: These values may be periodically updated; the latest available updated values should be used for screening and the lowest applicable standard should be used in the evaluation of landfill gas concentrations.

ppm = parts per million

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

a = RSLs are provided in "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites" (EPA, 2009)

b = Available Online at: <http://weblink.westlaw.com/Find/Default.wl?DB=CA%2DADC%2DTC%3BRVADCCATOC&DocName=17CAADCS70200&FindType=W&AP=&fn=_top&rs=WEBL8.10&vr=2.0&spa=CCR-1000&trailtype=26&Cnt=Document>

c = Available Online at: <<http://www.ciwmb.ca.gov/Regulations/Title27/ch3sb4b.htm#Article6>>

2.2.1. Field Sampling

LFG samples from gas vents and perimeter points will be collected using a hand-held field sampling device (a Landtec GEM™ 2000 land fill gas monitor or similar device). This device will be calibrated prior to use and be used to detect the presence and determine the concentrations of methane, carbon dioxide, oxygen, and hydrogen sulfide gases. Prior to sampling the LFG vents, the ball valve above the sample port on the vent standpipe will be closed. The gas monitor will be connected to the sample port using Teflon tubing, the sample port will be opened, and the monitor pump activated. For samples from perimeter points, the gas monitor and Teflon tubing will be connected to the sample port at the top of each probe. All LFG readings will be monitored until stable readings representing actual landfill gas concentrations are obtained. Readings will be documented on field forms and included in summary reports. To ensure representative samples, a minimum of three well volumes should be purged from each sampling port (for both LFG vents and perimeter points) prior to collecting a LFG sample in accordance with guidance for landfill gas monitoring from the California Integrated Waste Management Board (2008).

2.2.2 Sample Collection for Laboratory Analysis

LFG samples from gas vents and perimeter points for laboratory analysis will be collected immediately following the collection of field readings, but before re-opening the ball valve. This sample will be collected in an evacuated SUMMA canister, or similar, in accordance with EPA standards outlined in SW-846 (EPA, 2008). The sample will be submitted to a California-certified laboratory under chain of custody (COC) for analysis under EPA method TO-15 for VOCs (EPA, 1999), ASTM D-1946 for Permanent and Fixed Gases (ASTM International, 1990), and ASTM D-5504 for Sulfur Compounds (ASTM International, 2008).

2.3 Groundwater Monitoring System

A groundwater monitoring program is currently in place and will be revised upon construction of the cover system and OU-1 remedy. Groundwater monitoring will continue in accordance with the current groundwater monitoring program throughout implementation of the RD. A post-closure monitoring and sampling plan is being prepared and will be implemented in conjunction with the groundwater remedial investigation efforts for OU-2.

Select groundwater monitoring wells within the waste footprint will be inspected during site inspections. The inspection will entail a visual inspection of the well box and casing to determine if they have been tampered with, or damaged, and to verify that the covers are secure.

2.4 Maintenance Activities

The need for maintenance will be assessed following each inspection and documented on the field inspection forms (Attachment P1). If required, recommended maintenance actions will be summarized and approved by the Forest Service prior to completing the work.

Maintenance of the cap may include cover repairs, including placement of additional material and recompaction, if any signs of erosion are noted during inspections; slope stability repairs, if local areas of unstable slope are noted during inspections; revegetation of any areas where the vegetative cover appears inadequate; and berm repairs, including placement of additional material and compaction, if any signs of erosion are noted (e.g., if geogrid materials are exposed).

Burrowing animals can cause damage to the geosynthetic membranes in the multilayer cap. One method of warding off these animals is to use devices such as the Molecontrol®. The device sends out sound waves about every 15 seconds that are irritating to burrowing animals. Each device has an effective area of up to 9,000 square feet. The device and the batteries to operate it are housed in a waterproof, tubular container (about 2 inches in diameter and 17.5 inches long). If burrowing animals compromise the integrity of the cap, installation of these devices may be warranted. If used, the devices should be marked using stakes or flags, so they can be easily located during future inspections. Inspections of these devices should be performed as part of the general inspections, as appropriate.

Maintenance of the drainage system may include removing debris from the culverts and drainage channels; replacing the rock lining in the outfall areas and at the check dams if a significant loss in volume occurs; or repairing areas where flow has been obstructed. Maintenance of the french drain may include a video inspection of the underground pipes if pipe damage is suspected. If flow has been obstructed by a blockage, the blockage will be removed. If pipe integrity has been compromised, the pipe will be repaired or replaced.

Results of the vegetative cover inspection will be used to identify whether reseeding or further management of cap vegetation is necessary. Unvegetated areas on the cap should not exceed 5 percent of the total cap area. Bare spots on the cap and in areas adjacent to the cap that exceed 20 square feet will be reseeded to establish growth. Reseeding will be performed using the original seed mix and fertilizer or other mix prescribed by the Forest Service.

To protect the integrity of the geosynthetic membranes, trees, shrubs, and herbaceous plants with deep taproots will be identified and removed from the cap. If any noxious weeds or NUIS are found, a remedial strategy will be developed in consultation with appropriate Forest Service personnel to establish the best and safest approach for the removal of these species.

Maintenance of groundwater wells may include repair or replacement of the well box, well cover, or casing, depending on the nature and extent of any damage. Groundwater well abandonment requirements are included in the construction specifications of the RD. Groundwater well installation and redevelopment are not within the scope of this OMMP for OU-1.

Personnel conducting maintenance activities must comply with the following requirements:

- Complete the 40-hour health and safety training course or be trained in accordance with the hazardous waste training requirements specified in Title 29 of the Code of Federal Regulations, § 1910.120³
- Maintain up-to-date records that demonstrate compliance with Occupational Safety and Health Administration requirements; examples include 8-hour refresher training records and site health and safety officer certificates
- Follow all site safety protocols

2.5 Reporting

Site inspection and LFG sampling results will be reported to the Forest Service following each inspection or sampling event. Reports will include a summary of both field and laboratory data. Reports will include inspection logs, field sampling logs, photographic logs, and copies of COCs for samples collected and copies of laboratory analytical reports. Reports will be submitted no later than the last day of the month, following the month in which the inspection or sampling event took place. Following the 12 months or four quarters of sampling, depending on the required site inspection schedule and LFG sampling interval, an annual report containing data from all inspections and sampling events will be prepared and submitted. This report will summarize the site conditions observed and mitigation actions performed associated with site inspections, and compare the results of LFG sampling to applicable state, county, and other standards of air quality to determine if further treatment or evaluation is needed. Specifically, laboratory analytical results for vinyl chloride and hydrogen sulfide will be compared with EPA industrial RSLs for air. Since EPA has not established an RSL for methane, methane concentrations will be compared with appropriate screening levels to ensure that no more than five percent methane by volume in air will migrate off the site, in accordance with CCR Title 27 § 20921 (see Section 2.2). Any recommendations for additional site mitigation and/or LFG treatment methods, including cost analysis of alternatives, will be included in the annual report, as appropriate.

³ <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=29:5.1.1.1.8&idno=29>

3.0 Contingency Actions and Public Safety

This section discusses contingency actions to be implemented should public safety become an issue due to unauthorized land use or vandalism or natural disasters (including earthquakes, floods, major storms, or fires or explosions). For any catastrophic event, a landfill inspection should be completed, as soon as possible after the event is identified, to assess the degree of damage and the need for short-term or long-term corrective action. The checklist provided in Attachment P3 includes specific items to be inspected for each type of potential catastrophic event. This supplemental checklist should be used in conjunction with the standard checklist (Attachment P1) to ensure complete documentation of any damage. The inspection procedures outlined in Section 2.1.1 apply to all inspections (including those following catastrophic events).

3.1 Unauthorized Land Use Or Vandalism

Although the landfill area is officially closed to public access and the Forest Service expects to maintain the closure status on the property, recreational off-highway vehicles, including snowmobiles, dirt bikes, and all-terrain vehicles, are known to use current landfill cap throughout the year and are likely to continue this unauthorized use in the future. The quarterly inspections will be used to determine whether unauthorized land use is affecting the integrity of the cap or LFG control system and monitoring network to the degree that site conditions may become hazardous to individuals who may use the property. In addition, if any specific act of vandalism is reported on the site, an inspection of the areas vandalized should be conducted as soon as possible to determine whether damage has occurred. If inspection results indicate the potential for risks to human health, public access will be further restricted until the problem can be resolved. Potential restrictions include additional signage or imposing fines and increasing law enforcement to ensure public safety.

3.2 Earthquake

The LTBMU area has a moderate potential for earthquakes. In the event of a 5.0-magnitude or higher earthquake centered within 5 miles of the landfill, a full inspection will take place within 5 days. Post-earthquake inspections will be conducted to ensure the integrity of the landfill cap, side slopes, and other sensitive landfill components. The earthquake section of the emergency response inspection checklist, included in Attachment P3 will be used to

identify any damaged components. Particular attention will be paid to settlement or subsidence, cracks in the landfill cap, or damage to drainage channels, check dams, LFG vents, perimeter monitoring points, groundwater wells, and site security features (protective fencing and signs). Repairs to any damaged portion of the cap, drainage system, or LFG control system will be completed as soon as practical. If damage occurs that could pose a threat to public safety, the site will be secured immediately until repairs are made to restore all systems.

3.3 Flood Or Major Storm

In the event of a flood or major storm, the systems will be inspected as soon as possible for damage and operational integrity. Any storm greater than or equal to the 20-year 1-hour storm (approximately 1 inch of rainfall per hour) is considered a major storm event (Tahoe Regional Planning Agency, 1987). The probability of a major storm occurring in a given year is 1 in 20 (or approximately 5 percent). Repairs will be made as soon as practical. If damage occurs that could pose a threat to public safety, the site will be secured immediately until repairs are made to restore all systems.

3.4 Fire Or Explosion

In the event of a fire or explosion, the fire department will be notified immediately and Forest Service fire suppression programs will be implemented. The Forest Service will share applicable landfill information with local fire officials, as needed. In addition, the Forest Service will dispatch a fire specialist to assist in any fire emergency response. In the event of a landfill fire and if the cap is observed to be damaged, other firefighting methods (such as foam or smothering with dirt) will be considered and used, as appropriate. After the incident, the landfill cap will be thoroughly inspected to ensure that the integrity of the impermeable cap or any other sensitive landfill components has not been compromised. If large burned or charred areas are observed on the cap surface, a subsurface investigation may be required to determine whether damage to the subsurface LFG piping or geosynthetics in the cap has occurred. In this case, a work plan outlining the planned investigation approach (e.g., hand digging into the cap in specific areas to visually inspect geosynthetic materials, and conducting video surveillance of LFG piping) should first be submitted for Forest Service review and approval. If a subsurface investigation is warranted, all work must be conducted by a qualified contractor under the direction of a California-registered professional engineer. If damage to the geosynthetic layers in the cap has occurred, the Forest Service will implement corrective actions to repair the cap integrity

(e.g., patching portions of the damaged geosynthetic materials) to ensure that contaminants are contained and human health is protected. Any repair work will be conducted by a qualified contractor under the direction of a California-registered professional engineer, repaired sections will be surveyed by a California-licensed professional land surveyor, and all work will be documented in as-built drawings.

4.0 REFERENCES

- ASTM International, 1990. ASTM D 1946, "Standard Practice for Analysis of Reformed Gas by Gas Chromatography. March 30.
- ASTM International, 2008. ASTM D 5504, "Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence." June 15.
- California Integrated Waste Management Board, 2008. "Landfill Gas Monitoring Procedures." April 18. Available Online at: <http://www.ciwmb.ca.gov/LEAcentral/LandfillGas/Monitoring/default.htm>.
- Forest Service, 2007. "Record of Decision for Meyers Landfill, Operable Unit 1 - Landfill Waste Mass, El Dorado County, California." November.
- U.S. Environmental Protection Agency, 1999. "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)." EPA/625/R-96/010b. Center for Environmental Research Information, Office of Research and Development. January. Available Online at: <http://www.epa.gov/ttnamti1/files/ambient/airtox/to-15r.pdf>.
- EPA, 2009. "Regional Screening Levels (RSLs for Chemical Contaminants at Superfund Sites." September. Available Online at: <http://www.epa.gov/region09/waste/sfund/prg/>.
- EPA, 2008. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. Third Edition, as updated by Updates I, II, IIA, IIB, III, IIIA, IIIB, IVA and IVB. Available Online at: <http://www.epa.gov/sw-846/main.htm>.
- Tahoe Regional Planning Agency, 1987. "Regional Plan for the Lake Tahoe Basin, Code of Ordinances." Adopted on May 27, 1987. As amended December 18, 2002. Available Online at: <http://www.trpa.org/documents/docdwnlds/ordinances/COCh25.pdf>
- Weston Solutions, Inc. (Weston), 2007. "Final Supplemental Remedial Investigation and Feasibility Study, Meyers Landfill, El Dorado County, California." May.

TABLES



November 28, 2011 – Revision 1 for Annual Estimate December 7, 2011

Mr. Greg Stanton, Deputy Director
Environmental Management of El Dorado County

Via Email

RE: Meyers Landfill –Gas Monitoring per Event

Dear Greg:

This Scope of Services/Fee Proposal has been prepared by Dunn Environmental, Inc. (DE) of El Dorado Hills, California in response to your November 14th email request related to the Meyers Landfill Gas Monitoring. The email attachments were used to assess the background, site access and procedures related to the monthly and quarterly landfill gas (LFG) monitoring at the Meyers Landfill located along Dump Road in Meyers, California. The monitoring includes the sampling of two passive gas-vent system ports (V-3 and V-6 – 4-inch standpipes) and fourteen separate gas probes at six locations (GMP-1 through GMP-6 – 3/4-inch probes). These sampling locations are to be monitored and reported as per the referenced June 2010, Operations, Maintenance and Monitoring Plan (OMMP, Appendix P of the RAWP) and in accordance with the California Code of Regulations (CCR) Title 27, U.S. Forest Service and the County requirements.

SCOPE OF SERVICES

Task 1 – Per Event Landfill Gas Field Monitoring

Under this task, DE will complete the required per event landfill gas field monitoring as documented in Section 2.2 of the OMMP. Monthly and quarterly gas monitoring frequencies have been referenced in the OMMP for the sixteen sampling locations. Starting in December 2011, the landfill gas locations will be first sampled using a portable gas analyzer, LandtecGem2000™ or equivalent. An additional pump will be used to augment large purge volumes. Gas monitoring will be completed by connecting the gas analyzer to the sample and drawing air from the monitoring locations. Gas concentrations for methane, oxygen and carbon dioxide will be recorded in the field. Once gas concentrations have stabilized and three well purge volumes have been removed, DE will record gas concentrations on the field data sheet and

Mr. Greg Stanton

November 28, 2011, revised for Annual Estimate December 7, 2011

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disconnect gas analyzers from the well head for immediate laboratory volatile organic (VOC) sampling described under Task 2. Data sheets will also be used to report the date, time, barometric pressure, temperature and general weather conditions for each sample location. We will coordinate with the County for field duplication of the monitoring efforts. The estimated lump sum cost per field event is \$900 or \$10,800 annually.

Task 2 – Per Event Landfill Gas Laboratory VOC Testing

Under this task effort and as per the OMMP, DE will immediately collect: 1) TO-15 VOCs as per EPA, 2) ASTM 1946 – Fixed Gases (O₂, CO, CH₄, CO₂), 3) ASTM D 5504 – Sulfur Compounds with summa canisters and tedlar bags. On a per sample basis, the cost for these analyses is \$400; or \$6,400 per event quarterly or \$800 per event monthly or an estimated annual fee of \$32,000. The two gas vents will be sampled monthly and the 14 gas probes will be sampled quarterly.

Task 3 – Per Event Report

Under this task effort, DE will provide narrative and tabular summary of field monitoring and report findings to the County and Forest Service in a letter report within 60 days of field monitoring. Our report effort has been estimated at \$250 per event or \$3,000.

COMPENSATION ESTIMATE

For this costing effort, we have estimated a lump sum value of \$45,800 per year. This includes efforts related to field and reporting efforts. It is preferable to complete this project on a time and materials basis; since, we anticipate the field efforts can be reduced once a database is started, weather and long term access as the closure becomes complete.

DE appreciates the opportunity to serve you on this very important compliance project. Please do not hesitate to call with questions.

Sincerely,
DUNN ENVIRONMENTAL, INC.

Patrick F. Dunn, M.S., P.G., C.Hg.
President

PFD