Shaw® Shaw Environmental, Inc.

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June 29, 2007

Proposal 501252085/21000101

Mr. Trent Cave
Napa Vallejo Waste Management Authority
1195 Third Street, Room 101
Napa, California 94559

Re: Proposal to Conduct Environmental Monitoring Services for Year 2007/2008 for the American Canyon Sanitary Landfill

Dear Trent:

Shaw Environmental, Inc (Shaw) is pleased to submit this proposal to the Napa Vallejo Waste Management Authority (Authority) to provide environmental services for fiscal year 2007/2008 for the American Canyon Sanitary Landfill (ACSL).

These services are described below as seven tasks:

- Task 1 - Quarterly Groundwater, Surface Water, Leachate, and Vadose Zone Gas Probe Monitoring
- Task 2 - Quarterly Analytical Results of Monitoring Samples
- Task 3 - Quarterly and Annual Environmental Monitoring Reports
- Task 4 - Quarterly Leachate Monitoring Reports for Vallejo Sanitation District (VSFCD)
- Task 5 - Special Leachate Monitoring Events for VSFCD
- Task 6 - Minor Well Repairs (if needed)
- Task 7 - Retest Event (if needed)

Since Shaw's monitoring contract with the Authority expires July 1, 2007, we have prepared a cost estimate for environmental services for the third and fourth quarters of 2007 and first and second quarters of 2008.

Groundwater monitoring is required at ACSL by the San Francisco Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDRs) and Monitoring and Reporting Program (MRP) Order No. 97-072.

**Task 1 - Quarterly Groundwater, Surface Water, Leachate, and Vadose Zone Gas Probe Monitoring**

**Groundwater Monitoring.** The groundwater-monitoring program includes 12 monitoring wells, as listed on Table 1. Samples will be collected as specified in the Sampling and Analysis Procedures (EMCON, November 1994). The monitoring parameters for the ACSL as required in the MRP are summarized on Table 2.

The complete list of constituents of concern (COCs) for the ACSL is also presented on Table 2. During the first quarter of 1996, the first five-year COC monitoring event was conducted, which is required by RWQCB General WDR Order 93-113. A second COC event was conducted in third quarter 2001, and a third COC event was conducted in first quarter 2006. Therefore, the next COC monitoring event is scheduled to occur in the year 2011.

**Leachate Monitoring.** The MRP had required semiannual monitoring of leachate wells L-1 and PL-2 in the fiscal year 1998/1999. Thus, leachate analytical monitoring is no longer required in the MRP, except if any leachate seeps occur. Leachate seeps are to be sampled and analyzed as noted on Table 2 as well as for semi-volatile organic compounds. The COCs for the ACSL are listed on Table 2. If leachate seep or leachate COC sampling is required, a cost estimate for this sampling event will be prepared separately.

The MRP requires the monthly leachate volumes transported to the VSFCD Waste Water Treatment Plant to be reported in the quarterly monitoring reports. Shaw assumes that the Authority will supply us with the amount of leachate pumped on a monthly basis to VSFCD based on the leachate meter readings.

In addition, Shaw will sample each leachate tank as required by the VSFCD. We will include the analytical data in the quarterly and annual reports to the RWQCB. This special individual tank testing is an additional expense.

**Surface Water.** The slough on the east side of the site, which drains into the Napa River, will be monitored in two locations: an upstream monitoring point (S-1) and a downstream monitoring point (S-2). Sampling will take place as the tide is receding to best show the effects of site recharge to the slough. Samples will be collected on a quarterly basis for the monitoring parameters listed on Table 2.

**Vadose Zone Gas.** Shaw will conduct the quarterly vadose zone gas probe monitoring, as described in the "Landfill Gas Monitoring Plan" (EMCON, April 1994). This includes monitoring of seven in-place gas probes (MP-1 through MP-7) and two on-site facilities (maintenance building and gas plant). The analysis for methane will be conducted in the field with a GEM® Model 500. The results will be included in the quarterly and annual report as described in Task 3. NSPS compliance monitoring of the landfill gas (LFG) extraction system is included in a separate proposal.

**Water Level Surveys.** Quarterly water level measurements will be made for the wells listed on Table 1.

**Leachate Level Surveys.** Quarterly leachate level measurements from the LFG extraction wells are required by the MRP in order to prepare a leachate contour map. Shaw will measure leachate levels in the wells quarterly to prepare a leachate contour map. Table 1 lists the leachate wells to be used for these measurements. Approximately 70 LFG wells are used for these measurements.

**Subtask 2 - Quarterly Analytical Results of Monitoring Samples**

We will submit the samples collected under Task 1 to BC (groundwater and surface water) and Alpha (leachate) labs to conduct the analytical services for the ACSL. We will work closely with BC and Alpha Labs in order to obtain high quality analytical reports and results for the site. In order to simplify the billing process, we will incorporate the laboratory costs into our monthly invoice to the Authority at costs plus 10 percent to cover administrative services. The estimated lab costs are shown on Table 4.

**Task 3 - Quarterly and Annual Environmental Monitoring Reports**

Results of the quarterly environmental monitoring of groundwater, surface water, leachate and gas, as well as on-site observations, are to be reported to the RWQCB as stipulated by the site's WDR/MRP. The reporting details are summarized below.

**Quarterly Monitoring Reports.** Monitoring reports will be prepared each quarter and submitted by the fifteen of the month following the quarter. These reports will include the following, as required in the tentative WDR/MRP:

- Transmittal letter discussing compliance, noted violations, corrective actions taken

**Task 5 – Special Leachate Monitoring Events for VSFCD**

Shaw is currently conducting a special leachate-sampling program for VSFCD due to high chromium in certain leachate wells. The following leachate-monitoring plan has been implemented to assure that the leachate from the landfill does exceed the VSFCD's limits for chromium.

Samples will be collected from the individual leachate tanks at the landfill to be tested for the 11 metals in the permit prior to delivery of the leachate to the VSFCD facility. This individual tank metallic leachate testing will be conducted to assure that no leachate tanks are sent to VSFCD without prior approval. The metals analyses results of the individual tanks as well as an additional sulfide analysis result (performed by the landfill operator) will be sent to VSFCD to gain permission prior to pumping through the pipeline to VSFCD. This individual tank testing is above and beyond the normal testing program.

This monitoring program was developed to confirm that leachate from the landfill stays within the VSFCD's acceptance limits. This monitoring program is in addition to routine quarterly monitoring described in Task 4.

**Task 6 – Minor Repair Wells (if needed)**

Normal wear and tear of wells from use and exposure requires the periodic need for repairs. Shaw has included costs for minor well repairs if needed during the year. If required, services will be billed on a time and expense basis only after receiving authorization to complete the work from the Authority. If a drill rig is required to replace or abandon a well a separate estimate will be prepared.

**Task 7 - Retest Event (if needed)**

In the event that one or more of the wells needs to be retested due to the exceedance of a concentration limit, costs for a retesting event are included. These costs are based on a one-day sampling event and a lump sum for analytical costs. If a retest event is required, it will be billed on a time and expense basis only after receiving authorization from the Authority.

**COST ESTIMATE**

A cost estimate of $156,205 for all the above-described services is included in Table 4. Costs for Task 1 through 5 are only are $150,325, which assumes no well repairs (Task 6), or no retest events (Task 7) were needed throughout the year.

If you have any questions or need additional information, please do not hesitate to call. These services arepresented on a time and materials basis and are subject to mutually negotiable terms and conditions.

Sincerely,

SHAW ENVIRONMENTAL, INC.

Charles Metzinger
Project Manager

Julian C. Isham, PG, CEG, CHG
Geology Manager

Enclosures: Table 1 - Monitoring Network
Table 2 - Analytical Parameters and Laboratory Methods as required by the ACSL's WDR/MRP
Table 3 - Analytical Parameters and Laboratory Methods as required by the VSFCD
Table 4 - Proposed Cost Estimate

# TABLE 1

## MONITORING NETWORK

| Monitoring Points to be Sampled Quarterly (unless noted) | | | | |
|---|---|---|---|---|
| G-1* | G-6AR | G-10 | S-1 [1] | Leachate Tank Composite [2] |
| G-2* | G-7 | G-2D | S-2 [1] | |
| G-3A [1] | G-8 [1] | GW-4 | | |
| G-4 | G-9 | GW-6 | | |
| [1] Includes semiannual sampling (first and third quarters) for semi-VOCs.<br>[2] Analytical sampling as required by VSFCD (see Table 3). | | | | |
| **Wells Included in the Quarterly Water Level Survey** | | | | |
| G-1 | G-10 | GR-1** | GR-9** | approx. 70 gas extraction wells |
| G-2 | G-12 | GR-2** | GR-10** | L-1 to L-6, L-8 to L-20, and L-22 to L-35 |
| G-3A | G-1D | GR-3** | GR-11** | EW-4, 7, 9, 11, 13, 16, 17, 18, 23, 27, and 29 |
| G-4 | G-2D | GR-4** | GR-12** | GS-2, 7, 13, 18, 24, 25, 29, 37, 46, 48, 58, 60, 68, 69, 71, 73, 74, 80, 83, 85, 86, and 89 |
| G-6AR | G-3D | GR-5** | GR-13** | |
| G-7 | GW-2 | GR-6** | GR-14** | |
| G-8 | GW-4 | GR-7** | | |
| G-9 | GW-6 | GR-8** | | |
| **Wells require overnight recharge prior to sampling.*<br>***Leachate wells (GR, L, EW, and GS series wells).*<br>*G series wells monitor the first-encountered water-bearing zone in the Bay Mud.*<br>*GW series wells monitor sand units within the Bay Mud.* | | | | |

# TABLE 2

## ANALYTICAL PARAMETERS AND LABORATORY METHODS AS REQUIRED BY THE ACSL'S WDR/MRP

| Analytical Parameters | Analytical Method |
|---|---|
| **COCs (next event - year 2011)** | |
| Semi-VOCs | USEPA Method 8270 |
| Organochlorine Pesticides and polychlorinated byphenyls (PCBs) | USEPA Method 8080 |
| Chlorinated Herbicides | USEPA Method 8150 |
| Chloride | USEPA Method 300.0 |
| Nitrate + Nitrite as Nitrogen | USEPA Method 353.2 |
| Total Kjeldahl Nitrogen | USEPA Method 351.4 |
| Total Organic Carbon | USEPA Method 415.1 |
| Sulfide | USEPA Method 376.1 |
| 26 ICAP Metals | USEPA Method 6000 and 7000 Series |
| Cyanide | USEPA Method 335.2 |
| Total Dissolved Solids | USEPA Method 160.1 |
| Organophosphorus Pesticides | USEPA Method 8140 |
| **Monitoring Parameters for Groundwater and Surface Water** | |
| Semi-VOCs [1] | USEPA Method 8270 |
| VOCs [2] | USEPA Method 8260 |
| Arsenic | USEPA Method 7060 |
| Cadmium | USEPA Method 6010 |
| Chromium | USEPA Method 6010 |
| Copper | USEPA Method 6010 |
| Lead | USEPA Method 7421 |
| Nickel | USEPA Method 6010 |
| Turbidity [3] | Field Meter |
| pH [3] | Field Meter |
| Electrical Conductivity [3] | Field Meter |
| Total Dissolved Solids | USEPA Method 106.1 |

*[1] Semiannual monitoring (first and third quarters) for G-3A, G-8, S-1 and S-2.*
*[2] VOC analysis to include Methyl/Tert/Butyl Ether.*
*[3] Field measurement.*

# TABLE 3

## VALLEJO SANITATION AND FLOOD CONTROL DISTRICT REQUIRED ANALYSES AND LABORATORY METHODS

| Monitoring Parameters | Analytical Method* | Maximum Reporting Limits (mg/L)[1] |
|---|---|---|
| Arsenic | USEPA Method 206.2 | 0.004 |
| Beryllium | USEPA Method 210.1/210.2 | 0.001 |
| Cadmium | USEPA Method 213.1/213.2 | 0.002 |
| Chromium, Total | USEPA Method 218.1/218.2 | 0.01 |
| Copper | USEPA Method 220.1/220.2 | 0.05 |
| Lead | USEPA Method 239.1/239.2 | 0.05 |
| Mercury | USEPA Method 245.1/245.2 | 0.001 |
| Nickel | USEPA Method 249.1/249.2 | 0.05 |
| Selenium | USEPA Method 270.3 | 0.002 |
| Silver | USEPA Method 272.1/272.2 | 0.1 |
| Zinc | USEPA Method 289.1/289.2 | 0.1 |
| Total Phenols | USEPA Method 420.1/420.2 | 0.2 |
| Total Cyanide | USEPA Method 335.2 | 0.04 |
| Petroleum Based Oil and Grease | USEPA Method 413.1 | 10 |
| Total Identifiable Chlorinated Hydrocarbons (Organochlorine Pesticides and PCBs) | USEPA Method 608 | - - - |
| pH [2] | USEPA Method 150.1 | - - - |
| 5-Day Biochemical Oxygen Demand | USEPA Method 405.1 | 5 |
| Total Suspended Solids | USEPA Method 106.2 | 5 |

*These parameters will be analyzed quarterly for the leachate truck.*
*[1] As required by the VSFCD*
*[2] Will also be measured in the field *Other methods can be used to obtain the VSFCD Maximum Reporting Limits.*

# TABLE 4
# PRPPOSED COST ESTIIMATE FOR FISCAL YEAR 2007-2008
# AMERICAN CANYON LANDFILL

| Staff | Rate | Amount | Unit | Per Qtr | Per Year | Task Total |
|---|---|---|---|---|---|---|
| **Task 1 - Quarterly Groundwater, Surface Water, Quarterly Composite Leachate, and Vadose Zone Gas Probe Monitoring** | | | | | | |
| Field Personnel (samplers) | $60 | 40 | hour | $2,400 | $9,600 | |
| Sampling Coordinator (organizes event) | $65 | 12 | hour | $780 | $3,120 | |
| Project Manager (reviews parameters) | $139 | 4 | hour | $556 | $2,224 | |
| Total Labor | | | | $3,736 | $14,944 | |
| Markup of field labor | | 0.15 | percent of labor | $560 | $2,242 | |
| Equipment | $535 | 1 | lump | $535 | $2,140 | |
| Mileage | $0.58 | 480 | miles | $278 | $1,114 | |
| | | | | $5,110 | $20,439 | **$20,439** |
| **Task 2 - Quarterly Analytical Services** | | | | | | |
| 1st & 3rd Quarter groundwater & surface water | $7,000 | | | | | |
| 2nd & 4th Quarter groundwater & surface water | $6,000 | | | | | |
| Quarterly Tank Composite Sampling for VSFCD | $4,000 | | | | | |
| 100 special leachate tank samples for VSFCD | $32,000 | | | | | |
| BC & Alpha Labs | | $49,000 | plus 10% markup | | | **$53,900** |
| **Task 3 - Environmental Monitoring Reports** | | | | | | |
| **- Quarterly reports (Third Quarter 2007, First & Second Quarters 2008)** | | | | | | |
| JC Isham (geology manager, peer review) | $148 | 12 | hour | $1,776 | $5,328 | |
| Project chemist, quality control, GeoTracker | $100 | 16 | hour | $1,600 | $4,800 | |
| Janine Asmus (data entry, analysis) | $72 | 16 | hour | $1,152 | $3,456 | |
| Charles Metzinger (write report, project management) | $139 | 10 | hour | $1,390 | $4,170 | |
| Staff Geologist (contour maps, velocity calculations) | $82 | 8 | hour | $656 | $1,968 | |
| CADD (design engineering) | $15 | 6 | hour | $90 | $270 | |
| Prepare CADD drwgs. and figures | $75 | 4 | hour | $300 | $900 | |
| Word Processing | $55 | 4 | hour | $220 | $660 | |
| Clerical | $45 | 2 | hour | $90 | $270 | |
| Total Labor | | | | $7,274 | $21,822 | |
| Communications fee (3% of Labor) | | 0.03 | percent | $218 | $655 | |
| Miscellaneous Materials | $30 | 1 | lump | $30 | $120 | |
| | | | | $7,522 | $22,597 | |
| **- Fourth Quarter and Annual 2007 Monitoring Report** | | | | | | |
| JC Isham (geology manager, peer review) | $148 | 16 | hour | $2,368 | | |
| Project chemist, quality control, GeoTracker | $100 | 20 | hour | $2,000 | | |
| Janine Asmus (data entry, analysis) | $72 | 20 | hour | $1,440 | | |
| Charles Metzinger (write report, project management) | $139 | 8 | hour | $1,112 | | |
| Staff Geologist (contour maps, velocity calculations) | $82 | 8 | hour | $656 | | |
| CADD (design engineering) | $15 | 8 | hour | $120 | | |
| prepare CADD drwgs. and figures | $75 | 6 | hour | $450 | | |
| Word Processing | $60 | 5 | hour | $300 | | |
| Clerical | $55 | 3 | hour | $165 | | |
| Total Labor | | | | $8,611 | | |
| Communications fee (3% of Labor) | | 0.03 | percent | $258 | | |
| Miscellaneous Materials | $40 | 1 | lump | $40 | | |
| | | | | $8,909 | | |
| | | | | | | **$31,506** |

# TABLE 4
# PRPPOSED COST ESTIIMATE FOR FISCAL YEAR 2007-2008
# AMERICAN CANYON LANDFILL

| Staff | Rate | Amount | Unit | Per Qtr | Per Year | Task Total |
|---|---|---|---|---|---|---|
| **Task 4 - Quarterly Leachate Report for VSFCD** | | | | | | |
| JC Isham (geology manager, peer review) | $148 | 8 | hour | $1,184 | $4,736 | |
| Charles Metzinger (write report, project management) | $139 | 1 | hour | $139 | $556 | |
| Project chemist, quality control, write report | $100 | 10 | hour | $1,000 | $4,000 | |
| Sheila Richgels (data entry, analysis) | $72 | 10 | hour | $720 | $2,880 | |
| Word Processing | $60 | 3 | hour | $180 | $720 | |
| Clerical | $55 | 3 | hour | $165 | $660 | |
| Total Labor | | | | $3,388 | $13,552 | |
| Communications fee (3% of Labor) | | 0.03 | percent | $102 | $407 | |
| | | | | $3,490 | $13,959 | **$13,959** |
| **Task 5 - Special Leachate Monitoring Events for VSFCD** | | | | | | |
| Field Personnel (samplers) | $60 | 200 | hour | $12,000 | | |
| 100 additional leachate tank sampling events | | | | | | |
| Sampling Coordinator (organizes events) | $65 | 150 | hour | $9,750 | | |
| JC Isham (geology manager, peer review) | $148 | 20 | hour | $2,960 | | |
| Total Labor | | | | $24,710 | | |
| Markup of field labor | | 0.15 | percent of labor | $3,707 | | |
| Equipment | $250 | 8 | lump | $2,000 | | |
| Mileage | $0.58 | 180 | miles | $104 | | |
| (This item is above the normal costs due to the individual tank testing) | | | | $30,521 | | **$30,521** |
| **Task 6 - Monitor well repairs (will be conducted only if authorized by the Authority)** | | | | | | |
| Field Personnel (samplers) | $60 | 16 | hour | $960 | | |
| Sampling Coordinator (organizes event) | $65 | 2 | hour | $130 | | |
| Total Labor | | | | $1,090 | | |
| Markup of field labor | | 0.15 | percent of labor | $164 | | |
| Equipment | $500 | 1 | lump | $500 | | |
| Repair Materials | $500 | 1 | lump | $500 | | |
| Mileage | $0.58 | 120 | miles | $70 | | |
| | | | | $2,323 | | **$2,323** |
| **Task 7 - Retest Event (will be conducted only if authorized by the Authority)** | | | | | | |
| Charles Metzinger (write report, project management) | $139 | 2 | hour | $278 | | |
| JC Isham (geology manager, peer review) | $148 | 2 | hour | $296 | | |
| Project chemist, quality control, write report | $100 | 4 | hour | $400 | | |
| Janine Asmus (data entry, analysis) | $72 | 2 | hour | $144 | | |
| Field Personnel (samplers) | $60 | 8 | hour | $480 | | |
| Sampling Coordinator (organizes event) | $65 | 2 | hour | $130 | | |
| Total Labor | | | | $1,728 | | |
| Markup of field labor | | 0.15 | percent of labor | $259 | | |
| Equipment | $500 | 1 | lump | $500 | | |
| Mileage | $1 | 120 | miles | $70 | | |
| Analytical (only analyses tested will be billed) | $1,000 | 1 | lump | $1,000 | | |
| | | | | $3,557 | | **$3,557** |
| | | | | **TOTAL COST TASK 1-5** | | **$150,325** |
| | | | | **TOTAL COST TASK 1-7** | | **$156,205** |