

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NO. R2-2009-0034**

**UPDATED WASTE DISCHARGE REQUIREMENTS AND  
RESCISSION OF ORDER NO. 87-105 FOR:**

**MRS. LOIS AND MR. GREG TONNESEN  
TONNESEN PET CEMETERY  
CLASS III WASTE DISPOSAL SITE  
SUISUN CITY, SOLANO COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Water Board), finds that:

**DISCHARGER AND LOCATION**

1. Owner, operator, and discharger named: The Tonnesen Pet Cemetery is owned by Mrs. Lois Tonnesen and operated by Mr. Greg Tonnesen. Lois and Greg Tonnesen are hereinafter referred to as the Discharger.
2. Site location: The Tonnesen Pet Cemetery is located in Solano County, approximately one mile south of Travis Air Force Base and two miles southeast of Suisun City (Figure 1). The site is at the end of Scally Road, approximately one-half mile south of Highway 12 at the base of the Potrero Hills. The site occupies about 15 acres with a surface elevation between 10 and 20 feet above sea level. The site occurs within the Secondary Management Area of the Suisun Marsh, and much of the area surrounding the site is protected under the Suisun Marsh Preservation Act, which was adopted by the California Legislature in 1977. This area is under developmental restrictions enforced by the San Francisco Bay Conservation and Development Commission (BCDC). Land uses near the site are predominantly seasonal cattle grazing and open space (marsh and wetlands). However, one active municipal waste landfill (Potrero Hills Landfill) and one closed landfill (Solano Garbage Company Landfill) occur within one-half mile of the site.
3. The 15-acre site is divided into three adjacent 5-acre segments (Figure 2). The original site design approved by Solano County called for site development to occur in three phases, with each phase consisting of filling a 5-acre plot. To date, waste disposal operations have been conducted only in Phase I, which lies on the east side of the site.

## **PURPOSE OF ORDER UPDATE**

4. This Order:
- updates the facility's Waste Discharge Requirements (WDRs) and rescinds Board Order No. 87-105;
  - directs the Discharger to close the Phase I portion of the site and requires submittal of a final closure and post-closure maintenance plan for the Phase I portion of the site;
  - authorizes the Discharger to begin Phase II disposal operations;
  - establishes new best management practices (BMPs) for Phase II disposal operations; and
  - revises the facility's groundwater monitoring program to expand monitoring into the Phase II area.

## **FACILITY CLASSIFICATION**

5. A review performed by BCDC in 1981 concluded that the Tonnesen Pet Cemetery is not a cemetery in the conventional sense, but rather is an animal waste disposal facility. The facility is permitted to receive only the remains of small animals (e.g., cats and dogs). Typically, between 1,500 and 2,000 animal bodies are disposed per month. The facility buries between 400 to 500 cubic yards of animal remains per year. In the past, loads of animal bodies from veterinary clinics and animal shelters around the Bay Area and Sacramento area were delivered sporadically to the site by refrigerator trucks. For the past several years, an estimated 90 percent of the buried volume has consisted of cremated animal remains. The bodies are cremated prior to delivery to the site. Thus, the materials currently disposed at the site consist of about 90% ash and 10% whole animal bodies. This ratio is expected to remain similar for the foreseeable future. This Order permits the operator to dispose of cremated and whole animal bodies.

The facility is not permitted to receive typical municipal solid wastes (MSW). The facility is best classified under current Title 27 regulations as a non-MSW, Class III Nonhazardous Solid Waste Disposal Facility. The type of containment system that is required for the facility is based upon this classification.

## **WASTE CONTAINMENT REQUIREMENTS**

6. The Phase I portion of the disposal facility is unlined and has no leachate collection and recovery system. Animal remains have been buried in mass disposal trenches about 15 feet long by 3 feet across. Waste burial trenches are no more than 10 feet deep, and the pit floors are generally at least 10 feet above the elevation of the groundwater table.

Immediately after disposal, the Discharger is required to cover disposed materials with a minimum of one foot of soil. Upon filling each individual burial trench, the Discharger is required to cover the disposal trench with an interim cover consisting of at least two feet of soil. This Order requires that all wastes must be placed a minimum of 5 feet above the highest anticipated water level and no deeper than 10 feet below ground surface (Specification B.5). This Order also establishes new BMPs for the disposal and burial of animal remains (see Specification B.6).

7. Consistent with the facility's classification as a non-MSW, Class III Nonhazardous Solid Waste Disposal Facility (Finding 5), the composite liner and leachate collection system requirements for MSW landfills do not apply at this site. The facility's long operational history with no indication of water quality impacts (summarized in Findings 15, 16, and 17), coupled with a new requirement for improved operational practices to reduce the potential for leachate formation (Specification B.6), indicate that a composite liner and a leachate collection system are not necessary to protect water quality at this site. The Water Board believes the presence of a low-permeability composite liner beneath this site would promote the formation and accumulation of fluids and inhibit the rapid biodegradation of animal remains that typically occurs due to microbial activity in soil. Implementation of the specified BMPs at the time of disposal is expected to be more protective of water quality than a composite liner and leachate collection system.

## **OPERATIONAL AND REGULATORY HISTORY**

8. Operational history: The facility began animal disposal operations around 1980. The cumulative, historical operations at the facility have impacted less than five acres. Disposal operations are still being conducted in the Phase I area; however, Phase I is expected to reach capacity within two years. This Order authorizes the Discharger to begin disposal operations in the Phase II area.
9. Regulatory history: The facility has been regulated by the Water Board under WDRs Order No. 87-105, which was adopted on August 19, 1987. This Order updates the WDRs and rescinds Order No. 87-105. The new WDRs will apply to disposal operations for the remainder of Phase I operations and the Phase II portion of the site. The attached Self-Monitoring Program (Attachment A) will apply to groundwater monitoring of the Phase I and Phase II areas.

The site is also regulated by the Solano County Department of Resource Management, Environmental Health Division under Marsh Development Permit No. MD-82-12 and Land Use Permit U-82-42. The Solano County Planning Department extended these operational

permits in 1987, 1992, 1997, and 2002. On August 8, 2008, the Planning Department approved another five-year extension of Marsh Development Permit MD-82-12 (until August 2013).

## **SITE GEOLOGIC AND HYDROGEOLOGIC SETTING**

10. Stratigraphy: The site is underlain by estuarine Holocene Bay Mud and Pleistocene alluvial deposits derived from exposed bedrock in the Potrero Hills.
11. Groundwater: Groundwater is present in the alluvial sediments beneath and adjacent to the site. The water table is typically encountered at a depth of 15 to 20 feet below ground surface. The predominant groundwater flow direction is primarily north-northwestward toward the marsh from the base of the Potrero Hills. The hydraulic conductivity of the water-bearing material is estimated to be  $5 \times 10^{-4}$  centimeters per second. Groundwater flow velocity beneath the site is calculated to be about 30 feet per year.
12. Surface water: The site is located in an area that slopes gently to the north. The southern boundary of the site is about 15 feet higher than the northern boundary. Surface runoff from the Potrero Hills south of the disposal area is diverted around the site by a 1-1/2 foot high berm constructed along the southern edge of the site. Surface runoff from the site flows northwestward into Suisun Marsh. Surface water north of the site is tidally influenced and saline (containing high total dissolved solids [TDS] content), and is not considered a potential source of drinking water.
13. Geologic structure and seismic stability: The site is located on the north side of the Potrero Hills anticline. Geologic strata dip to the north beneath the site. The nearest active fault is the Green Valley Fault, which is located approximately 10 miles west of the site. The Hayward-Rodgers Creek Fault is located approximately 26 miles west of the site, and the San Andreas Fault is located 43 miles west of the site.

## **WATER QUALITY AND SITE CONTAMINATION**

14. Ambient water quality: Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas containing high TDS (greater than 3,000 milligrams per liter (mg/L) TDS), high background contaminant levels, or those areas with a low yield. Based on the ambient TDS concentrations in site monitoring wells, groundwater beneath the site is considered a potential source of drinking water. One private supply well is located approximately 500 feet

southwest (upgradient) of the facility. To the north of the site, surface water and shallow groundwater are characterized by high TDS, reflecting the proximity to Suisun Marsh.

15. Impacts to water quality: There have been no confirmed impacts to groundwater or surface water quality from disposal operations at this facility. However, as discussed below, coliform bacteria and low levels of certain volatile organic compounds (VOCs) have recently been detected in site groundwater monitoring wells, including the background well. These contaminants do not appear to be sourced from the facility, as explained in Findings 16 and 17.
16. Coliform Investigation: In 2006 and 2007, coliform bacteria was detected in three of the four groundwater monitoring wells at the facility, including the site background well that is located upslope from the disposal area. At the request of Water Board staff, the Discharger performed a focused groundwater investigation to determine whether the shallow water-bearing zone beneath the facility has been impacted by releases of coliform bacteria from the facility. This investigation was initiated in November 2007 and completed in January 2008. The primary objectives of the investigation were:
  - to determine if the coliform bacterial contamination was present in the groundwater beneath and outside the facility, or restricted to water inside the well casings; and
  - to determine the extent of contamination and identify potential coliform sources.

To determine whether the bacterial contamination was restricted to the well casings, the four groundwater monitoring wells located within the facility (MW-1, MW-2, MW-3, and MW-4) were disinfected with chlorine bleach to kill the bacteria present, and then redeveloped prior to sampling on November 30, 2007. The wells were disinfected to ensure that the water samples represented water drawn from the aquifer and not water that had a long residence time inside the well casings. None of the initial samples collected in November 2007 from these wells showed the presence of coliform bacteria. Follow-up samples collected from the four wells in January 2008 also yielded no coliform bacteria in excess of the minimum detection limit.

In addition to the samples collected from monitoring wells, the investigation included collection of samples from temporary boreholes drilled around the perimeter of the disposal area. Of the eight shallow groundwater grab samples, four showed no detectable coliform bacteria. Four groundwater samples (three from temporary boreholes and one from a shallow agricultural water supply well on the adjacent Griffith property) yielded low-level coliform detections. Two of these detections, including the highest concentration, were from locations upgradient from the facility, while two coliform detections were in locations downgradient from the facility. Overall, the distribution of coliform in shallow groundwater outside and upslope from the facility, coupled with the absence of coliform in the shallow groundwater

beneath the facility, indicates a high likelihood that the coliform is from a source unrelated to the animal disposal operations.

17. Comprehensive Groundwater Assessment: In addition to the coliform investigation, another groundwater investigation was performed at the site in November 2007 to support final closure of the Phase I portion of the facility. To ensure that groundwater has not been impacted by disposal operations in the Phase I area, groundwater samples were collected from the four site monitoring wells and analyzed for the following potential constituents of concern:

- volatile organic compounds (VOCs)
- semi-volatile organic compounds (SVOCs)
- dissolved metals (arsenic, barium, cadmium, copper, chromium, lead, mercury, nickel, vanadium, and zinc)
- other metals (antimony, beryllium, cobalt, selenium, silver, and thallium)
- pesticides
- chlorophenoxy herbicides
- cyanide
- sulfide.

The results of this one-time sampling for potential constituents of concern showed no evidence of impacts to groundwater from disposal operations at the facility. No SVOCs, PCBs, pesticides, herbicides, cyanide, or sulfides were detected. Certain metals (barium, nickel, mercury, and chromium) exceeded the reporting limit in some wells; however, metals concentrations were generally within the normal range of background concentrations. Some VOCs were detected at elevated concentrations. The detected chemicals (primarily chloroform, bromoform, bromodichloromethane, and dibromochloromethane) are common disinfection by-products, and the presence of this suite of trihalomethanes is consistent with the chlorine disinfection of wells MW-1 through MW-4 prior to the coliform investigation in November 2007. To evaluate this interpretation, additional samples were collected from the four monitoring wells on January 17, 2008, and analyzed for VOCs. In general, the January samples contained the same compounds but at significantly lower concentrations, indicating dilution and/or rapid breakdown of these chemicals.

## **BASIN PLAN**

18. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Board and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required.

## **BENEFICIAL USES**

19. The beneficial uses of groundwater beneath the facility include:
  - a. Municipal and domestic water supply
  - b. Agricultural supply
  - c. Industrial process and service supply
  - d. Discharge to Suisun Marsh
  
20. The beneficial uses of surface water in Suisun Marsh include:
  - a. Wildlife and estuarine habitat
  - b. Contact and non-contact water recreation
  - c. Fish migration and spawning
  - d. Preservation of rare and endangered species
  - e. Groundwater recharge
  - f. Agricultural supply

## **MONITORING PROGRAMS**

21. Groundwater monitoring: Since 1987, groundwater beneath the facility has been monitored by four groundwater monitoring wells on the facility perimeter (Wells MW-1 through MW-4). Site monitoring well locations are indicated on Figure 2. Well MW-1 on the south perimeter of the site is designated a background well while wells MW-2, MW-3, and MW-4 are compliance wells used to monitor for potential releases from the facility. Significant impacts to groundwater from migration of leachate would likely be detected in the perimeter compliance wells. To assess potential discharges from the facility, groundwater samples are to be analyzed semi-annually for pH, turbidity, electrical conductivity, total dissolved solids, dissolved oxygen, chloride, sodium, potassium, calcium, magnesium, bicarbonate, carbonate, sulfate, nitrate, total Kjeldahl nitrogen, total organic carbon, and total coliform. A revised Self-Monitoring Program for the facility is attached to this Order (Attachment A).
  
22. This Order (Specification 12) requires the Discharger to install additional groundwater wells to allow adequate monitoring of the expansion (Phase II) area.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

23. CEQA: This action is an order to enforce the laws and regulations administered by the Water Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15301 of the Resources Agency Guidelines.
24. Public notice: The Water Board has notified the Discharger and interested agencies and persons of its intent to adopt updated WDRs for the facility and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
25. Public meeting: The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that the Discharger, its agents, successors and assigns shall meet the applicable provisions contained in Title 27, Division 2, Subdivision 1 of the California Code of Regulations and Division 7 of the California Water Code and shall comply with the following:

### **A. PROHIBITIONS**

1. The disposal of animal remains shall not create a condition of pollution or nuisance as defined in Section 13050 (l) and (m) of the California Water Code.
2. The disposal of laboratory animals, or other animals that may be contaminated with radioactive or hazardous constituents, is prohibited.
3. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever. Wastes shall not be placed in any location where they can be discharged into waters of the State or of the United States.
4. Leachate and ponded water containing leachate or in contact with waste shall not be discharged to waters of the State or of the United States unless specifically authorized under an NPDES permit.
5. The Discharger shall not excavate within or reconfigure any existing waste management unit without prior Water Board approval.
6. Disposal of waste shall not degrade the quality of groundwater beneath and in the vicinity of the site.

7. Expansion of disposal operations outside the Phase II area without advance approval from the Water Board is prohibited.
8. The Discharger, or any future owner or operator of the site, shall not cause the following conditions to exist in waters of the State at any place outside the facility:
  - a) Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b) Bottom deposits or aquatic growths;
  - c) Alteration of temperature, turbidity, or apparent color beyond natural background levels;
  - d) Visible, floating, suspended or deposited oil or other petroleum products;
  - e) Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

**B. SPECIFICATIONS**

1. All reports pursuant to this Order shall be prepared under the supervision of a California registered professional civil engineer, professional geologist, or certified engineering geologist.
2. The Discharger shall maintain existing containment, drainage, and monitoring systems at the facility for as long as disposed wastes pose a threat to water quality.
3. The site shall be protected from any washout or erosion of wastes or cover material and from inundation that could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.
4. The Discharger shall ensure that the structures which control surface drainage and erosion are constructed and maintained to withstand conditions generated during the maximum probable earthquake.
5. The site shall be operated to ensure that all wastes will be a minimum of five feet above the highest anticipated elevation of underlying groundwater, with the excavated pits being no deeper than 10 feet below ground surface.
6. The facility is authorized to accept cremated animal remains and whole animal bodies. Henceforth, each semi-annual monitoring report must provide the volume of cremated animal remains buried during each monitoring period in addition to the volume of whole animal bodies buried.

7. Disposal of whole (uncremated) animal remains at the site will require, as an operational BMP, the placement of highly absorbent, high-carbon material such as wood chips, sawdust, rice hulls, or shredded newspaper beneath and above the animal remains at the time of disposal. This material is intended to absorb produced liquids and facilitate biologic breakdown of the remains, producing a benign, soil-like organic end-product that poses no chemical or biologic threat to water quality. A minimum of 12 inches of absorbent material must be placed beneath each waste load that includes uncremated animal bodies, and a minimum of 6 inches of absorbent material must be placed over the top of each load prior to placement of soil cover.
8. Immediately after disposal, animal remains shall be covered with at least 12 inches of soil (in addition to the 6 inches of absorbent material if uncremated remains were disposed). Upon filling, each completed disposal pit shall have an interim cover of at least 24 inches of soil.
9. The Discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.
10. Upon closure of each disposal Phase, disposal areas shall be graded and covered with a final cap system consisting of a minimum of four feet of cover material. The cover material shall include, from top to bottom, a minimum of one foot of vegetative or erosion-resistant material, at least one foot of clay with  $10^{-6}$  cm/sec permeability, and two feet of cap foundation material between the clay layer and buried animal remains.
11. Upon closure, the final cap system shall be constructed and maintained to promote lateral runoff and prevent ponding and infiltration of water. The elevation of the final capped surface must be at least as high as the ground surface outside the disposal area.
12. A drainage diversion berm shall be constructed along the uphill (southern) edge of the Phase II disposal area prior to placement of any waste in the Phase II area.
13. Three new groundwater monitoring wells designed for detection monitoring must be installed around the perimeter of the Phase II area prior to disposal of any wastes in new cells. These new wells shall include one background well located outside the disposal area upslope (to the south) of the Phase II area and two downgradient wells to serve as Point of Compliance wells around the western and northern margins of the Phase II area. Existing well MW-2 shall be used to monitor the interior of the facility.
14. The Discharger shall implement a Discharge Monitoring Program (DMP), pursuant to Title 27, Section 20420. The DMP shall be designed to provide prompt detection of any water quality impacts from disposal operations and demonstrate compliance with the Water Quality Protection Standard (WQPS), which is required pursuant to Title 27, Section 20390. The attached Self-Monitoring Program (SMP) (Attachment A) will constitute the DMP for the facility and is hereinafter a part of this Order. The purpose of the SMP is to detect, at the

earliest opportunity, any unauthorized discharge of waste constituents from the facility, or any unreasonable impairment of beneficial uses associated with the facility's past or present activities.

15. Water Quality Protection Standard: The facility's Water Quality Protection Standard (WQPS) consists of the following elements:
  - a) Constituents of Concern: Section 20395 of Title 27 defines Constituents of Concern (COCs) as "all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit." For this facility, the COCs are the same as the Monitoring Parameters (MPs), and thus all COCs are monitored each reporting period. MPs include pH, turbidity, electrical conductivity, total dissolved solids, dissolved oxygen, chloride, sodium, potassium, calcium, magnesium, bicarbonate, carbonate, sulfate, nitrate, total kjeldahl nitrogen, total organic carbon, and total coliform. The Discharger may propose modification to the MPs as additional data become available concerning site-specific source characteristics and natural background water quality. However, any modifications shall require written concurrence from the Executive Officer.
  - b) Concentration Limits: At any given time, the Concentration Limit for each MP is based upon an evaluation of all data collected for that parameter from the designated background well, pursuant to Title 27, Section 20400. In an appendix to each monitoring report, the Discharger shall list all background concentration data used as the Concentration Limit for each MP, along with the mean and standard deviation of the Concentration Limit. A parametric upper prediction limit shall be calculated from the background data set using statistical methods as appropriate.
  - c) Point of Compliance: Title 27 defines the Point of Compliance (POC) as the vertical surface located at the hydraulically downgradient limit of the disposal unit that extends through the uppermost aquifer underlying that unit. For this site, the POC shall be the northern (downgradient) perimeter of the facility.
  - d) Monitoring Points: The compliance monitoring points for the facility are located along the POC and at additional locations, and include the existing downgradient wells MW-2, MW-3, and MW-4, plus any new monitoring wells that are installed along the downgradient boundary of the Phase II area.
16. The Discharger shall operate the facility to prevent any exceedance of the WQPS as specified in Specification B.15. Any statistically significant increase in the concentration of any MP at the POC above its respective Concentration Limit in the designated background well, or any exceedance of the approved numeric Concentration Limit for the MP at the POC, is considered an exceedance of the WQPS, consistent with Section 20420 of Title 27.

17. The Discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future DMP issued by the Executive Officer.
18. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
19. The Water Board shall be notified immediately of any failure occurring at the facility. Any failure that threatens water quality shall be promptly corrected after approval of the method and schedule by the Executive Officer.
20. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.
21. The Discharger shall submit to the Water Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge, including any proposed change in the boundaries of the disposal area.
22. Three months prior to discontinuing waste disposal in each Phase of this facility, the Discharger shall submit a closure plan that will provide for final closure of that Phase, according to the closure requirements of Title 27. The closure plan shall include a plan to install a final cover and to configure the facility surface to facilitate proper drainage and minimize infiltration.

**C. PROVISIONS**

1. The Discharger shall comply immediately, or as prescribed by the time schedule below, with all Prohibitions, Specifications and Provisions of this Order. All required submittals must be acceptable to the Executive Officer. The Discharger must also comply with all conditions of these WDRs. Violations may result in enforcement actions, including Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Board. [CWC Section 13261, 13263, 13265, 13267, 13268, 13300, 13301, 13304, 13340, 13350].
2. All technical reports required pursuant to this Order are being requested pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to Section 13268 of the California Water Code.

3. **Electronic Reporting Format:** In addition to print submittals, all reports submitted pursuant to this Order must be submitted as electronic files in PDF format. Electronic files shall be submitted via the Water Board's file transfer protocol (FTP) site, email (if the file size is less than 3 MB), or on CD. CD submittals may be included with the print report. Email notification should be provided to Water Board staff whenever a file is uploaded to the Water Board's FTP site. All reports must also be entered electronically into the Water Board's GeoTracker database (<http://geotracker.waterboards.ca.gov>). Upon request by Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel® or similar spreadsheet format, or in a format compatible with Sanitas® water quality data analysis software. These formats facilitate data computations and/or plotting that Water Board staff may undertake during review.
  
4. **PLAN FOR CLOSURE AND POST-CLOSURE MAINTENANCE OF PHASE I**  
The Discharger must submit a report, acceptable to the Executive Officer, which describes a detailed plan for final closure of the Phase I portion of the facility according to Specifications B.10 and B.11 of this Order. The closure plan shall propose installation of a final cover on the Phase I area and the configuration of this portion of the facility surface to facilitate proper drainage and minimize infiltration. This report must also describe a plan for post-closure maintenance and monitoring of the Phase I area.

COMPLIANCE DATE: 90 days prior to closure of Phase I

5. **FINANCIAL ASSURANCE FOR CLOSURE, POST-CLOSURE MONITORING AND MAINTENANCE**  
The Discharger shall submit evidence of an Irrevocable Fund, acceptable to the Executive Officer, to ensure that funds are available for proper closure of each Phase of the facility, as well as for monitoring and maintenance of the facility during the post-closure period. Every five years, for the duration of the post-closure monitoring period, the Discharger shall submit a report that includes an outline of the financial assurance mechanism and verification that the fund has been created. Fund value should be supported by calculations, to be included with this submittal, providing cost estimates for all post-closure monitoring, maintenance, repair and replacement of facility containment, cover, and monitoring systems. The fund value should be based on the sum of these estimates. The cost estimates and funding should be updated to reflect change to monitoring systems as they occur. The post-closure maintenance period shall extend as long as disposed wastes pose a threat to water quality, however for purposes of calculating cost estimates, a period of no less than 30 years may be used.

COMPLIANCE DATE: October 1, 2009, then every five years thereafter

**6. FINANCIAL ASSURANCE FOR CORRECTIVE ACTIONS**

The Discharger shall submit evidence of an Irrevocable Fund, acceptable to the Executive Officer, to ensure any corrective action and remediation actions that may be necessary as a result of current or future unforeseen releases from the facility. Every five years, for the duration of the post-closure monitoring period, the Discharger shall submit a report that includes an outline of the financial assurance mechanism and verification that the fund has been created. Fund value should be supported by calculations, to be included with this submittal, providing cost estimates for all corrective action measures and remediation that may be required at the facility. The fund value should be based on the sum of these estimates. The cost estimates and funding should be updated as necessary. The post-closure maintenance period shall extend as long as disposed wastes pose a threat to water quality, however for purposes of calculating cost estimates, a period of no less than 30 years may be used.

COMPLIANCE DATE: October 1, 2009, then every five years thereafter

**7. WELL INSTALLATION REPORT**

The Discharger shall submit a technical report, acceptable to the Executive Officer, that provides well construction details, geologic boring logs, and well development logs for all new wells installed for routine site monitoring (including wells installed to monitor the Phase II area) or for non-routine site investigations.

COMPLIANCE DATE: 45 days following completion of well installation activities

**8. ANNUAL MONITORING REPORT**

The Discharger shall submit an Annual Monitoring Report, acceptable to the Executive Officer, by January 31 of each year in accordance with the attached SMP (Attachment A). The annual report to the Water Board shall cover the previous calendar year as described in Part A of the SMP.

COMPLIANCE DATE: January 31 of each year

**9. SEMI-ANNUAL MONITORING REPORT**

The Discharger shall submit semi-annual groundwater monitoring reports, no later than January 31 and July 31 of each year in accordance with the attached SMP (Attachment A). In accordance with the SMP, the Discharger must perform quarterly groundwater elevation measurements and semi-annual groundwater quality monitoring in all facility monitoring wells. Routine monitoring shall consist of collection and analysis of samples for the monitoring parameters listed in Table 1 of the SMP. The January 31 semi-annual report may be combined with the annual report.

COMPLIANCE DATE: January 31 and July 31 of each year

10. **ANNUAL MAINTENANCE REPORT**

The Discharger shall submit a technical report to the Board, acceptable to the Executive Officer, detailing the repair and maintenance activities that need to be completed prior to the commencement of the next rainy season (starting October 15 of each year). This letter report shall also include a description and schedule for repair and maintenance activities, and a cost analysis detailing the anticipated expense for all repairs, maintenance and monitoring during the next 12 months. Repair and maintenance estimates shall be based on rainy season inspections conducted throughout the winter as required in the SMP.

COMPLIANCE DATE: January 31 of each year

11. Change In Site Conditions: The Discharger shall immediately notify the Board of any flooding, ponding, settlement, equipment failure, exposure of waste, or other change in site conditions that could impair the integrity of the facility cap, waste containment facilities, and/or drainage control structures and shall immediately make repairs. Within 30 days, the Discharger shall prepare and submit a technical report, acceptable to the Executive Officer, documenting the corrective measures taken.

NOTIFICATION DUE DATE: Immediately upon occurrence

REPORTING DUE DATE: 30 days after initial notification

12. The Discharger shall maintain a copy of these WDRs and it shall be available to operating personnel at all times [CWC Section 13263].
13. The Discharger shall permit the Water Board or its authorized representative, upon presentation of credentials:
- a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
  - b. Access to copy any records required under the terms and conditions of this Order.
  - c. Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this Order or by any other California State Agency.
  - d. Sampling of any discharge or groundwater governed by this Order.
14. Change in Ownership: In the event of any change in control/operator or ownership of land or parcel of land, or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. The Discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new Discharger. The notice must include a written agreement between the existing and new Discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current Discharger and the new Discharger. This agreement shall include an acknowledgment that the existing Discharger is

liable for violations up to the transfer date and that the new Discharger is liable from the transfer date forward. [CWC Sections 13267 and 13263]. The request must contain the requesting entity's full legal name and the address(es) and telephone number(s) of the persons responsible for contact with the Water Board. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

15. This Order is subject to Board review and updating, as necessary, to comply with changing State and federal laws, regulations, policies, or guidelines; changes in the Water Board's Basin Plan; or changes in the discharge characteristics [CWC Section 13263]. The Executive Officer may specify minor changes to the DMP as necessary.
16. Where the Discharger becomes aware that if they failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Water Board, shall promptly submit such facts or information [CWC Sections 13260 and 13267].
17. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the Discharger from its liability under federal, State or local laws, nor do they create a vested right for the to continue the waste discharge [CWC Section 13263(g)].
18. Provisions of these WDRs are severable. If any provision of these WDRs is found invalid, the remainder of the WDRs shall not be affected.
19. The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order [CWC Section 13263(f)].
20. Except for a discharge which is in compliance with these WDRs, any person who, without regard to intent or negligence, causes or permits any hazardous substance or any sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with

Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the Discharger is in violation of a prohibition in the applicable Water Quality Control Plan [CWC Section 13271(a)].

21. The Discharger shall report any noncompliance that may endanger public health or the environment. Any such information shall be provided orally to the Executive Officer within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267].
22. Water Board Order No. 87-105 is hereby rescinded.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 8, 2009.

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Bruce H. Wolfe  
Executive Officer

Figures:       Figure 1 – Site Location Map  
                  Figure 2 – Site Layout Map  
Attachment:   Attachment A – Self-Monitoring Program

## **FIGURES**

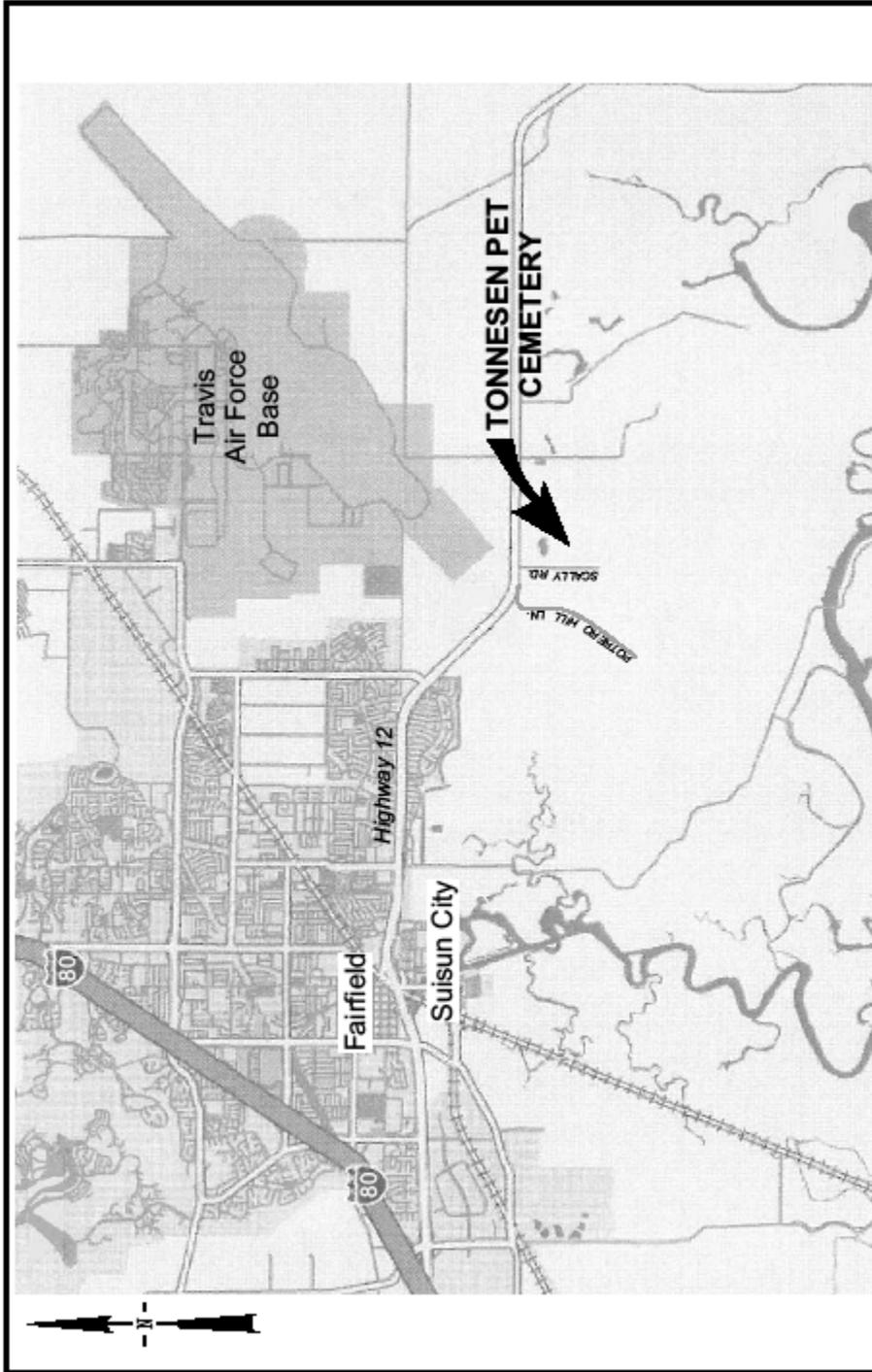


FIGURE	
TONNESEN PET CEMETERY SUISUN CITY, CALIFORNIA	SITE VICINITY

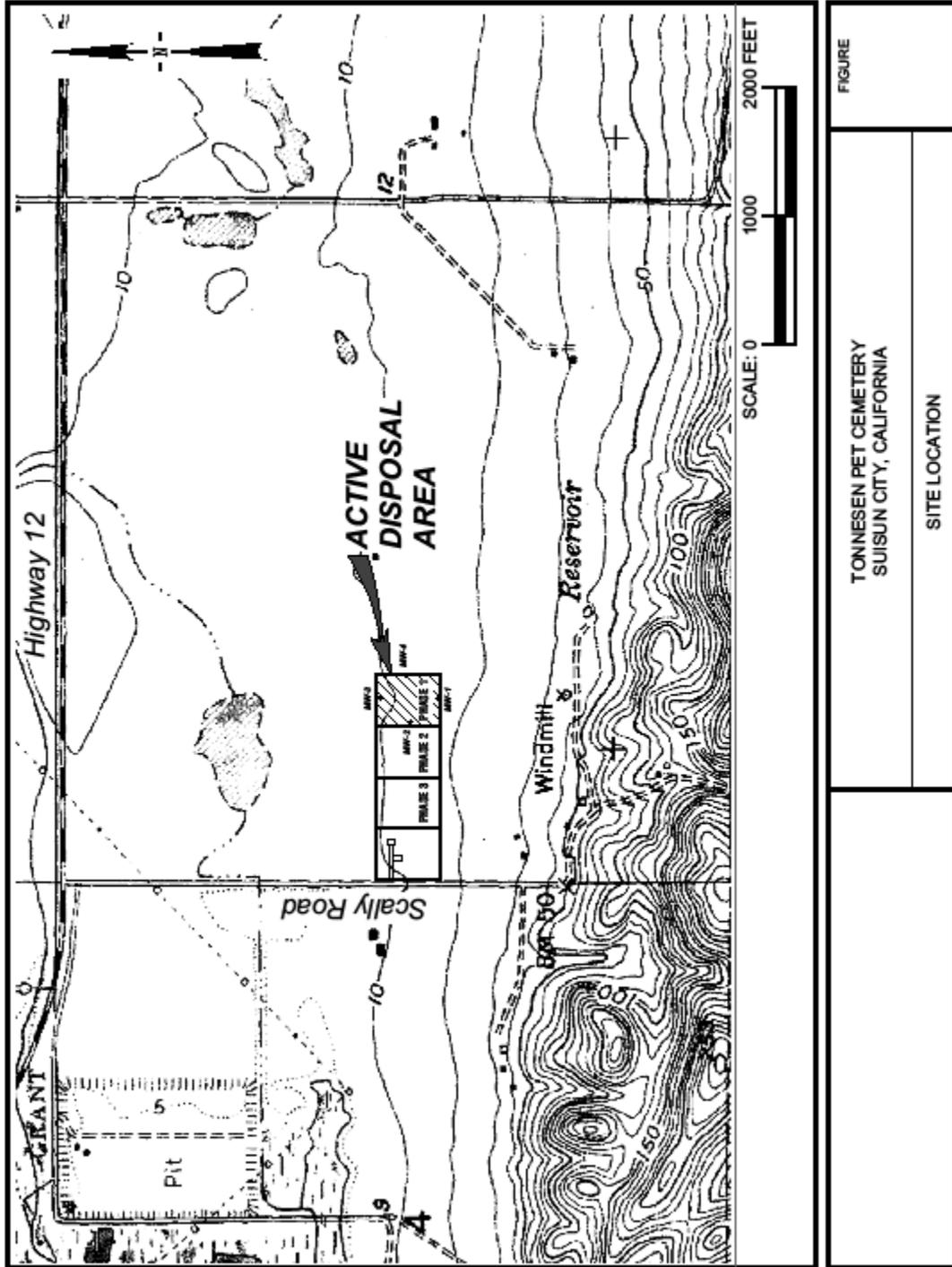


FIGURE	
TONNESSEN PET CEMETERY SUISUN CITY, CALIFORNIA	
SITE LOCATION	

**ATTACHMENT A**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**SELF-MONITORING PROGRAM**

**FOR**

**TONNESEN PET CEMETERY  
SUISUN CITY, SOLANO COUNTY**

**ORDER NO. R2-2009-0034**

**CONSISTS OF**

**PART A**

**AND**

**PART B**

## **PART A**

### **A. GENERAL**

Reporting responsibilities of waste discharges are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Board's Resolution No. 73-16. This Self-Monitoring Program (SMP) is issued in accordance with Title 27 of the California Code of Regulations.

The principal purposes of a discharge monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste dischargers in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, and (4) to assist dischargers in complying with the requirements of Title 27.

### **B. SAMPLING AND ANALYTICAL METHODS**

Sample collection, storage, and analyses shall be performed according to the most recent version of U.S. EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved by the State of California for these analyses. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and all reports of such work submitted to the Water Board shall be signed by a duly authorized representative of the laboratory.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

### **C. DEFINITION OF TERMS**

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface that actually or potentially receives surface or groundwaters that pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas and the surface runoff from the site are considered receiving waters.
3. Standard observations refer to:
  - a. Receiving Waters:
    - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;

- 2) Discoloration and turbidity: description of color, source, and size of affected area;
  - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
  - 4) Evidence of beneficial use: presence of water associated wildlife;
  - 5) Flow rate;
  - 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
- b. Perimeter of the waste management unit:
- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate;
  - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
  - 3) Evidence of erosion and/or daylighted refuse.
- c. The waste management unit:
- 1) Evidence of ponded water at any point on the waste management facility;
  - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
  - 3) Evidence of erosion, slope or ground movement, and/or daylighted refuse;
  - 4) Adequacy of access road;
  - 5) Standard Analysis and measurements are listed on Table A (attached).

#### **D. SAMPLING, ANALYSIS, AND OBSERVATIONS**

The Discharger is required to perform sampling, analyses, and observations in groundwater and leachate per the general requirements specified in Section 20415(e) of Title 27.

#### **E. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Water Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number
2. Date and time of sampling

3. Date and time that analyses are started and completed, and name of the personnel performing the analyses
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used
5. Calculation of results
6. Results of analyses, and detection limits for each analysis.

**F. REPORTS TO BE FILED WITH THE BOARD**

1. **Electronic Reporting Format**

In addition to print submittals, all reports submitted pursuant to this SMP must be submitted as electronic files in PDF format. Electronic files shall be submitted via the Water Board's file transfer protocol (FTP) site, email (if the file size is less than 3 MB), or on CD. CD submittals may be included with the print report. Email notification should be provided to Water Board staff whenever a file is uploaded to the Water Board's FTP site. All reports must also be entered electronically into the Water Board's GeoTracker database (<http://geotracker.waterboards.ca.gov>). Upon request by Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel® or similar spreadsheet format, or in a format compatible with Sanitas® water quality data analysis software. These formats facilitate data computations and/or plotting that Water Board staff may undertake during review.

2. **Monitoring Reports**

Written monitoring reports shall be filed by January 31 and July 31 of each year. In addition, an annual report shall be filed by January 31 of each year. The semi-annual monitoring report due on January 31 of each year can be combined with the annual report. The reports shall be comprised of the following:

- a. **Letter of Transmittal:** A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and any actions taken or planned for correcting the violations. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring

reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

- b. Compliance Evaluation Summary: The summary shall contain:
  - 1) Graphic descriptions of the direction of groundwater flow during each quarter under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.
  - 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
  - 3) Type of pump used and pump placement for sampling, and a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.
  - 4) A written discussion of the groundwater analyses indicating any change in the quality or characteristics of the groundwater.
- c. A comprehensive discussion of the compliance record and status, as well as any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Waste Discharge Requirements and 27CCR.
- d. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- e. Laboratory statements with the results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and all reports of such work submitted to the Board shall be signed by a duly authorized representative of the laboratory.

- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than U.S. EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.
  - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that are outside laboratory control limits; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
- f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
- g. The Annual Monitoring Report shall be submitted to the Board no later than January 31 covering the previous year. The Report shall include, but is not limited to, the following:
- 1) A graphical presentation of the analytical data [Board-approved alternate procedure per 27CCR, Section 20415(e)(14)] for monitoring locations that have shown detectable concentrations during two consecutive monitoring events, or greater than ten percent detection frequency for any organic compound. Graphical representation must be provided for monitoring locations with metals and general chemistry analytical parameters that have an increasing trend for three consecutive monitoring events;
  - 2) A tabular summary of all the monitoring data obtained during the previous year;
  - 3) A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements;
  - 4) A written summary of the groundwater analyses indicating any change in the quality of the groundwater;
  - 5) A list of Concentration Limits for each monitoring parameter, based on the historical monitoring data from the background well; and

- 6) Tabular and graphical summaries of the monitoring data obtained during the previous year. The report should include a compact disc tabulating the year's data in MS-EXCEL® or Sanitas® format.

3. **Discharge Reporting**

A report shall be made by telephone of any discharge or migration of any waste or water that has been in contact with waste from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:

- a. a map showing the location(s) of discharge, if any;
- b. approximate flow rate;
- c. nature of effects (i.e., all pertinent observations and analyses); and
- d. corrective measures underway, proposed, or as specified in the Waste Discharge Requirements.

4. **Well Logs**

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the State Department of Water Resources. These shall be submitted within 45 days after well installation.

**G. WATER QUALITY PROTECTION STANDARD**

The Water Quality Protection Standard (WQPS) for this facility is described in Specification B.15 of the WDRs.

## PART B

### 1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

#### A. GROUNDWATER MONITORING:

**Semi-Annual Report:** due January 31 and July 31 of each year  
**Annual Report:** due January 31 of each year

Groundwater levels shall be measured quarterly using all available groundwater wells. Groundwater shall be sampled and analyzed semi-annually for the parameters specified in Table 1. Data collected during January through June are to be submitted in a semi-annual report by July 31 of each year. Data collected during July through December are to be submitted by January 31<sup>st</sup> of the following year. The semi-annual report for the 2<sup>nd</sup> monitoring period can be combined with the annual groundwater monitoring report. The DMP includes existing wells MW-1, MW-2, MW-3, and MW-4, plus any new wells installed to provide monitoring for the Phase II expansion area. Semi-annual reports must include the volumes of cremated and uncremated wastes disposed during the reporting period.

#### B. FACILITY MONITORING:

**Annual Report:** due January 31 of each year

The Discharger shall inspect the facility quarterly to ensure proper maintenance and report the inspection results annually. The facility monitoring shall include, but not be limited to, visual inspection of:

1. Surface water ponding
2. Perimeter diversion channels and run-on/run-off control features
3. Interim and final cover placement.

The Facility Monitoring Report shall provide photodocumentation of conditions at the facility. Locations from which photographs are taken should be permanent stations such that they can be used for comparison in successive reports.

The foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with WDRs established in this Board's Order No. R2-2009-0034.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Date Ordered: April 8, 2009

Attachments: Table 1

**Table 1**  
**Groundwater Monitoring Points, Parameters and Sampling Frequency**  
**Tonnesen Pet Cemetery**

***Detection Monitoring Program***

Wells MW-1, MW-2, MW-3, MW-4 and all new wells installed to monitor the Phase II area shall be sampled for the following parameters:

<b>Monitoring Parameters</b>	<b>Laboratory Method</b>	<b>Sampling Frequency</b>
<ul style="list-style-type: none"> <li>• pH</li> <li>• Turbidity</li> <li>• Electrical Conductivity</li> <li>• Total Dissolved Solids</li> <li>• Dissolved Oxygen</li> <li>• Chloride</li> <li>• Sodium</li> <li>• Potassium</li> <li>• Calcium</li> <li>• Magnesium</li> <li>• Bicarbonate</li> <li>• Carbonate</li> <li>• Sulfate</li> <li>• Nitrate</li> <li>• Total Kjeldahl Nitrogen</li> <li>• Total Organic Carbon</li> <li>• Total Coliform</li> </ul>	various field and laboratory methods	Semi-Annually