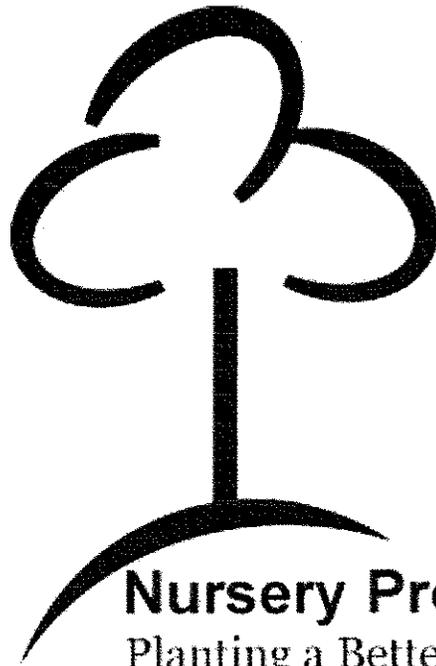


**NURSERY PRODUCTS  
HAWES COMPOST FACILITY  
WDID No. 6B3609903006**



**Monitoring and Reporting Plan & Sampling and  
Analysis Plan**

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# INTRODUCTION

## 1.1 Terms of Reference

Nursery Products has prepared this Monitoring and Reporting Plan & Sampling and Analysis Plan (MRPSAP) for the Hawes Composting facility (WDID No. 6B3609903006) for two surface impoundments (retention ponds) and one waste pile (compost pad) at the Nursery Products Hawes Composting Facility.

## 1.2 Overview and Purpose

This document was prepared for Nursery Products in support of the Report of Waste Discharge (ROWD) for the Nursery Products Hawes Composting Facility. This MRPSAP has been prepared in accordance with California Code of Regulations Title 27 and Board Order No. R6V-2010-0010.

# 2. FACILITY OVERVIEW

## 2.1 Project Description

The facility is a biosolids and green material composting facility located on approximately 80 acres of a 160-acre parcel located within an unincorporated area of the County. The facility will compost biosolids and green material to produce agricultural grade compost in compliance with U.S. Environmental Protection Agency (EPA) Code of Federal Regulations (CFR), Title 40, Chapter 1, Part 503 and CCR Title 14.

There are two surface impoundments located on the northern end of the facility that collect storm water. The surface impoundments are designed to collect all storm water from the 100-year, 24-hour storm event over the entire facility and the 1,000-year, 24-hour storm event that falls directly on the surface impoundments.

The waste pile (engineered pad) is located beneath the composting process and consists of prepared subgrade of no less than 12 inches of engineered native material. The engineered pad is sloped to prevent ponding such that all storm water will flow to the surface impoundments. The facility will contain all storm water from the 1,000-year, 24-hour storm event that fall on the site.

# 3. ENVIRONMENTAL CONTROL AND MONITORING SYSTEMS

This section presents a description of the environmental control and monitoring systems at the Nursery Products Hawes Composting Facility in accordance with CCR Title 27.

## 3.1 Groundwater Monitoring System

Monitoring well locations were identified so that water quality data can be collected up gradient (MW-1) and down gradient (MW-2 and MW-3) of the two surface impoundments and waste pile. The monitoring wells locations are shown on the figures provided in Appendix A. Following installation of the monitoring wells, site-specific groundwater flow direction will be assessed using groundwater elevation data from these wells. The list of parameters can be found in Board Order No. R6V-2010-0010. The samples, with the exception of field parameters, will be analyzed by a California state-

certified laboratory. Initially, these wells will also be sampled quarterly for at least eight quarters to characterize background water quality and flow conditions.

### 3.1.1 Monitoring Well Installation

Prior to drilling, Underground Service Alert (USA) will be contacted at least 48 hours in advance of drilling to notify operators of subsurface utilities of our intention to drill as required by law. The utility companies will conduct a mark-out of their utilities that are in the vicinity of the proposed drilling. In addition, a well permit will be obtained from The San Bernardino County Department of Environmental Health.

The monitoring wells will be installed using either air rotary or sonic drilling by a state-licensed drilling contractor. Installation methods and materials will comply with California State Department of Water Resources Well Standards (DWR Bulletin Nos 74-80 and 74-91) that are described in the sections below. The proposed groundwater monitoring well design is shown in Appendix A.

The field engineer/geologist will inventory the well construction materials prior to the start of well construction. Proposed monitoring wells will be constructed from materials specified herein. Well materials shall be new and clean, and soiled materials will be cleaned prior to use, and decontaminated if there is a potential that well materials have contacted contaminated surfaces. The well casing will consist of threaded, Schedule 80 PVC pipe. The diameter of the casing will be four inches. The well screen will consist of threaded, machine-slotted Schedule 80 PVC pipe (0.020-inch slots) with a threaded PVC end cap. Stainless steel centralizers will be used, at 30-foot intervals. The well will be set so that approximately 20 feet of the 30 feet of screen will lie below the level of groundwater. The annular space will be backfilled with Monterey #3 sand to a level of approximately 5 feet above the top of the well screen. The filter pack will be placed using a tremie pipe. The level of the sand will be periodically sounded to identify its depth and the water in the wells will be surged so that the filter pack will settle.

Bentonite grout will be pumped and placed using a tremie pipe or equivalent to fill the annular space to a minimum of two feet above the choke to seal the screening interval. A high-solids bentonite grout should be used or bentonite chips may be placed in 6-inch lifts. Unless prohibited by well conditions, each lift should be hydrated using approximately 1 gallon of potable water per lift of bentonite chips. The completed bentonite transition seal will be allowed to hydrate for at least 30 minutes prior to placing the grout. The depth to the top of the transition seal will be verified by measuring, using a weighted tape.

Upon completion of the well, the riser pipe will be cut cleanly so that the top of the well is level, and a mark or notch made on the top of the riser pipe identifying a measuring point for water level measurements. A locking cap will be placed at the top of the casing to secure the well from unauthorized entry. A traffic-rated, flush-mount well box will be completed at the ground surface.

After completion of well installation, the drilling contractor will perform well development by airlifting/swabbing, and pumping or other methods to remove residual drilling solids. Water will be pumped from the well until the discharge is relatively free of fine-grained sediment. Water quality parameters such as pH, turbidity, specific conductance, and temperature will be monitored during development. Depth to water will be measured using an electronic water-level indicator.

A boring log showing the well construction/completion for each well will be completed in the field by the field geologist/engineer under the supervision of a Professional Geologist or Engineer. Well installation and construction data will be summarized in the log book. Well development notes and field measurements of water quality parameters will be summarized on corresponding well development and purging forms.

Following the completion of well installation, wells will be surveyed by a professional land surveyor licensed in the state of California, and in accordance with the California State Plane coordinate system and appropriate vertical datum. Groundwater levels will be measured post-installation to evaluate the groundwater flow direction.

### 3.1.2 Groundwater Monitoring and Sampling

Groundwater monitoring, sampling and analysis will be conducted on a quarterly basis. Prior to purging the water level in each well will be measured using an electronic water-level indicator to the nearest 0.01 foot. Each well will be purged of three borehole volumes. Temperature, pH, and conductivity will be monitored during purging to document the stability of these parameters before sampling. Water samples will be collected using disposable polyethylene bailers. Therefore, no rinsate blank will be collected for analysis when sampling the wells.

Groundwater samples will be placed in laboratory-supplied containers that will be sealed, labeled and stored in a cooler with ice during transport under chain-of-custody procedures to a state-certified laboratory for analyses. Parameters listed in Board Order No. R6V-2010-0010 will be performed in accordance with recommended holding times, containers and preservatives by a state-certified laboratory.

### 3.2 Vadose (Unsaturated) Zone Monitoring - Surface Impoundments

The vadose zone monitoring system beneath each surface impoundment will consist of a permanent lysimeter (See Appendix A). The lysimeter will consist of 60-mil HDPE. The dimensions of each lysimeter sump will be 25 feet square, 2 feet deep and be filled with crushed rock. Each lysimeter sump will be located with the top being 5 feet below the bottom of the surface impoundment. An access port will be installed to monitor the lysimeter.

The particular locations of the monitoring points were selected based upon the surface impoundment design which already contains a LDMS located at the lowest spot of the surface impoundment.

Each lysimeter will be inspected quarterly for the presence of liquids. Detection of leachate in a previously dry lysimeter requires immediate notification of the RWQCB and testing for parameters in Attachment B of Board Order No. R6V-2010-0010.

### 3.3 Vadose (Unsaturated) Zone Monitoring - Waste Pile (Compost Pad)

The proposed vadose zone monitoring system beneath the waste pile consists of annual soil sampling. Ten soil samples from within the native engineered fill of the waste pile will be collected at six-inch intervals to depth of 1.5 feet beneath the waste pile. The samples collected from the 6-inch intervals will be sent to the laboratory under chain-of-custody procedures for analyses appearing in Board Order No. R6V-2010-0010. If the results of those analyses indicate a measurably significant release

using statistical analysis then the 12-inch interval samples must be analyzed for those constituents that indicated the release. If the results of those analyses indicate a measurably significant release using statistical analysis then notification procedures will be followed and measures will be taken to repair or replace the composting pad. All samples, with the exception of field parameters, will be analyzed by a California state-certified laboratory. Following sample collection, the void space will be backfilled with bentonite and compacted.

Background data of the native engineered fill material for the monitoring parameters and constituents of concern will be collected prior to the construction of the facility. Nursery Products will collect 10 samples from throughout the 80 acre project area. The samples will be composited into a single sample and will be analyzed by a California state-certified laboratory for the parameters required in Board Order No. R6V-2010-0010.

### 3.4 Sludge Monitoring

Annually, in the last quarter of each year, representative grab samples of the bottom sludge of each surface impoundment, if present, will be collected, and each sample analyzed for the constituents listed in Board Order No. R6V-2010-0010.

### 3.5 Wastewater Monitoring

Quarterly, a minimum of three liquid grab samples from each of the surface impoundments will be collected from a depth of approximately one foot, opposite the inlet, in a quiescent surface area. The Grab sample from each surface impoundment may be composited by the laboratory into two samples, one for each surface impoundment. The samples will be analyzed for the monitoring parameters in Board Order No. R6V-2010-0010. If the surface impoundment is dry at the time of monitoring, this condition will be noted in the monitoring report.

### 3.6 Leak Detection Monitoring Sump (LDMS)

Weekly, inspection for liquid in the LDMS will be conducted. The result of these inspections will be recorded in a permanent logbook kept onsite. If liquid is detected in a LDMS, the RWQCB will be notified immediately.

Any volume of liquid pumped out of the LDMS will be recorded along with date, time, and discharge location, in a permanent logbook kept on site.

Upon detection of leachate in a previously dry LDMS, a grab sample will be collected and tested for the parameters listed in Board Order No. R6V-2010-0010.

### 3.7 Dikes & Liners

Monthly, each of the surface impoundment dikes and liners will be visually inspected to determine if there are any indications of loss of integrity. Should the inspection indicate that any unauthorized discharge has occurred, or may occur; the Water Board will be notified within 48 hours, followed by confirmation in writing within 7 days.

Daily, measure and record the freeboard, as measured from the top of the lowest part of the dike to the wastewater surface in each surface impoundment. Observations and measurements will be recorded in a permanent log book kept onsite. If the surface impoundment is dry, then indicate that it is dry in the log book and monitoring report.

The weather forecasts will be monitored daily and whenever rain is forecast. Each surface impoundment will be inspected and documented prior to each predicted event.

### 3.8 Facility Storm Water Berm

Monthly, and before, during, and after any storm event that produces precipitation at the Facility, the berm around the Facility must be visually inspected to determine if there are any indications of loss of integrity. Inspections, inspection results, and activities performed to correct deficiencies must be documented. Should the inspection indicate that any unauthorized discharge has occurred, or may occur; the Water Board must be notified within 48 hours, followed by confirmation in writing within 7 days.

### 3.9 Facility Odor Monitoring

An Odor Impact Minimization Plan will be developed. Daily, the discharger will assess the site conditions and evaluate potential sources of objectionable odors and document these inspections. Documentation will include a description of any odors detected. Wind speed and direction will be checked and logged daily and just prior to any activities at the Facility that may produce nuisance dust. Odor control measures include odor screening and load checking procedures; feedstock storage and processing measures; windrow management measures, good housekeeping procedures; and an odor complaint response system. Odor control activities at the Facility must be documented daily in a permanent log book kept on site.

### 3.10 Operation and Maintenance

A brief summary of any operational problems and maintenance activities must be submitted to the Water Board with each monitoring report.

### 3.11 Dust Control

The following mitigation measures must be implemented and monitored to ensure dust is controlled:

- Unpaved roads will be watered, as necessary, to minimize visible dust. Alternatively, roads may be paved;
- During episodes of high winds (>30 mph) activities that may create nuisance dust may not be performed;
- Daily, monitor moisture content of windrows that are more than 30 days old using a standard field test for moisture. Moisture will be determined by taking a representative sample of the windrow materials and forming the material into a ball by hand; the materials should hold together without crumbling. If material crumbles, water will be added. Moisture monitoring activities must be documented daily in a permanent log book on site.

## 4 REPORTING

### 4.1 Monitoring Reports

Monitoring reports will be submitted quarterly on the 30<sup>th</sup> day of the month following each quarter. Annual monitoring reports will be submitted no later than April 30 of each year. Every five years there will be sampling for non-monitoring parameter COC's with successive direct monitoring efforts being carried out alternatively during January 1 through June 30 of one five-year sampling event and July 1 through December 31 of the next five year sampling event, and every fifth year, thereafter. The first five year non monitoring parameter COC sampling event must take place during January 1 through June 30 of the second year of operation, and reported no later than 45 days following the monitoring period.

### 4.2 Technical Reports

No later than 90 days following completion of construction, a technical report will be submitted discussing the installation of the monitoring system. No later than 760 days following the beginning of operations, a proposed data analysis method and a proposed concentration limit (background data set) consisting of eight data points will be submitted. This report must be certified by a registered Civil Engineer.

## 5 CERTIFICATION

I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this Monitoring and Reporting Plan & Sampling and Analysis Plan for the Nursery Products Hawes Composting Facility and all attachments and, based on my inquiry of those individuals immediately responsible for obtaining the information; I believe the information is true, accurate, and complete. My seal as a registered professional engineer licensed in the State of California is affixed below.





# APPENDIX A

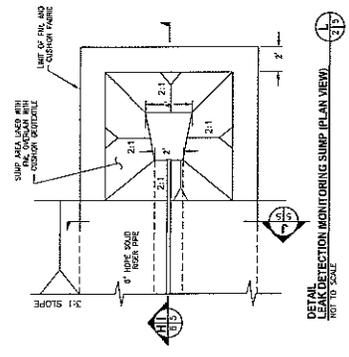
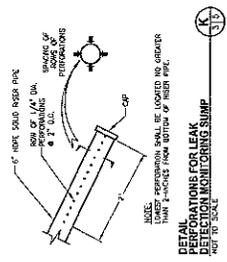
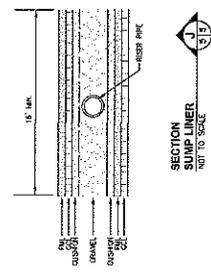
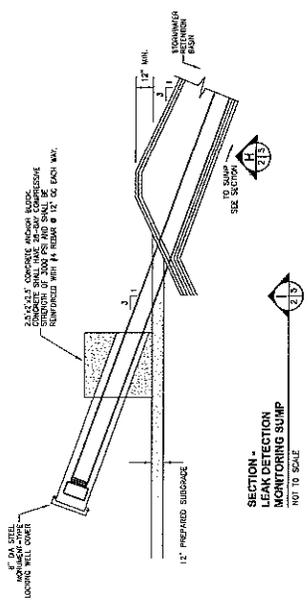
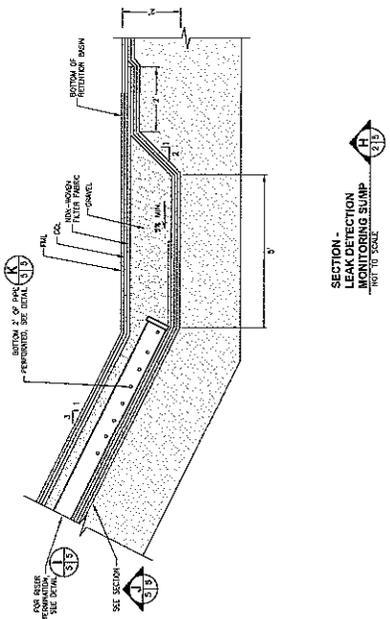
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NO.	REVISION	DATE	BY	CHKD
1	ISSUED FOR CONSTRUCTION	04-10-10	BJ	BJ
2	REVISION			
3	REVISION			
4	REVISION			
5	REVISION			
6	REVISION			

PROJECT: HAWES COMPOSTING FACILITY  
SHEET NO.: 3

CLIENT: SAN BERNARDINO COUNTY, CA

DESIGNED: JDT  
CHECKED: LDF  
PROJECT: 00M  
DATE: 04-01-10

**URS**  
1115 Market Street, Suite 200  
San Francisco, CA 94102

DETAILS AND SECTIONS

