CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

MONITORING AND REPORTING PROGRAM for:

Facility:	**Lawson' Landing Wastewater Facility, Lawson's Landing, Marin County**
Discharger:	**Lawson's Landing, Incorporated**
Permit Type:	**Waste Discharge Requirements, General Order Enrollment**
Permit:	**State Water Resources Control Board's General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems**
Order:	**State Water Resources Control Board Order WQ 2014-0153-DWQ**
Case No.:	**CIWQS Place Number 769381**
Enrollment:	**Notice of Applicability Letter dated: Month DD, 20XX**
Effective Date:	**Month DD, 20XX**

I. GENERAL

A. Monitoring and Reporting Program Purpose

This Monitoring and Reporting Program (MRP) describes requirements for monitoring the Lawson's Landing Wastewater Facility (Facility). The monitoring requirements and practices described in the MRP are, generally, *minimum* levels of monitoring. Additional monitoring, other than as specified here, is acceptable, such as in response to treatment changes or investigations of uncertainties. Results of additional monitoring conducted for monitoring stations and parameters given in this MRP shall be reported in accordance with MRP section VI.A.3.d. Other additional monitoring conducted shall be explained in the monitoring reports, and the data shall be made available to the Regional Water Board upon request.

The Facility is the wastewater collection, treatment, and discharge systems serving domestic wastewater (sewage) generated from day-visit and over-night recreational users and facility staff at the Lawson's Landing property. In this MRP, the Facility is also referred to as the "wastewater system."

The land uses, wastewater system, and discharges are described in the Report of Waste Discharge (ROWD) and the Notice of Applicability letter (NOA).

The property, land uses, and the wastewater system are owned and operated by Lawson's Landing, Incorporated (Discharger).

The actual operation and maintenance work will be performed under contract to the owners, by qualified service providers. The wastewater treatment plant shall be operated and maintained by qualified and state-certified wastewater operators, in accordance with the requirements of California Water Code (Water Code) sections 13627 and 13628, and California Code of Regulations title 23, sections 3670 through 3719.

B. Monitoring and Reporting Program Basis

The legal basis of this MRP includes Water Code sections 13267 and 13268. In brief, section 13267 authorizes the collection of technical or monitoring program reports about waste discharges, and section 13268 authorizes the imposition of civil monetary fines if reports are not completed as necessary. Below are excerpts from each of these Water Code sections, to explain key provisions of the legal requirements and to illustrate the importance of proper reporting. The excerpts below are for explanation. For complete meanings, the Water Code must be consulted in continuum.

Water Code section 13267 states, in part:

> "In conducting an investigation ... the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be

obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

Water Code section 13268 states, in part:

"(a) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267, or failing or refusing to furnish a statement of compliance as required by subdivision (b) of section 13399.2, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

(b)(1) Civil liability may be administratively imposed by a regional board in accordance with article 2.5 (commencing with section 13323) of chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs."

The Discharger and Facility are subject to the NOA and this MRP, which require technical and monitoring reports. The reports are necessary to document compliance with the waste discharge requirements of the General Order, the NOA, and the MRP. Pursuant to Water Code section 13267, the Discharger shall implement this MRP and shall submit the monitoring reports described herein.

C. Monitoring and Reporting Program Changes

1. The Executive Officer of the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) may authorize changes to the monitoring and reporting practices specified in this MRP, in consideration of acceptable alternate means of monitoring, and the total inventory of monitoring data. Factors to be considered include: data quality, adequate characterization of the identified water or wastewater system process, consistency of system performance, compliance with waste discharge requirements, and acceptable means for providing equivalent and adequate monitoring of the identified water or wastewater system process.
2. Requests for changes to monitoring or reporting practices must be submitted to the Regional Water Board in writing, with a complete description of proposed changes and alternate means of monitoring.
3. The Executive Officer shall authorize acceptable changes to monitoring or reporting practices in writing.
4. The Discharger shall not implement changes to authorized monitoring and reporting practices until applicable changes are authorized in writing by the Executive Officer.

D. Sampling

1. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled.
2. For all samples, the following information shall be recorded in chain-of-custody form(s): Name of the sampler, time, date, location, sample type (grab or composite), sample container, and any preservatives used.
3. The chain of custody form must also contain all custody information including date, time of custody transfers, and to whom samples were relinquished.

E. Field Instruments

Field test instruments (such as those used to test pH, dissolved oxygen, and electrical conductivity) may be used provided that they are used by a State Water Resources Control Board California Environmental Laboratory Accreditation Program certified laboratory, or:

1. The user is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated as recommended by the manufacturer; prior to monitoring events;
3. Instruments are serviced and/or calibrated as recommended by the manufacturer or authorized service provider; and
4. Calibration reports are maintained and available for at least three years.

II. DEFINITION OF TERMS AND MONITORING REQUIREMENTS

The following are definitions and explanations of selected important terms and monitoring requirements used in this MRP, in particular in the Monitoring Requirements section, to specify applicable required monitoring practices for the wastewater system.

A. Flow Measurement

Flow measurement is the accurate measurement of the flow volume over a given period of time using a properly calibrated and maintained flow measuring device. Flow determination from a properly calibrated and maintained automated pump-use recording device, such as a pump dose event counter, for a calibrated and documented pump, is acceptable.

B. Flow Monitoring and Reporting

Flows shall be monitored continuously and reported as total flow for that monitoring station for each day, and each calendar month, and in annual reports as the total for the calendar year.

C. Monitoring Frequency Terms

Terms used for sampling frequency and/or monitoring periods are described below.

No.	Term	Term Description
1.	Continuous	Continuous monitoring.
2.	Daily	One time each calendar day.
3.	Weekly	One time per calendar week, with sampling intervals of at least five days.
4.	Monthly	One time per calendar month, with sampling intervals of at least three weeks.
5.	Quarterly	One time per calendar quarter, at intervals of about three months.
6.	Annual	One time per calendar year.

D. Nitrogen Monitoring

The nitrogen content of the wastewater shall be monitored and assessed based on the parameter Total Nitrogen, which is the sum of analytical test results for Total Kjeldahl Nitrogen, Nitrate Nitrogen, and Nitrite Nitrogen. All data for all forms of nitrogen shall be reported "as Nitrogen," in values of milligrams nitrogen per liter, (mg-N/L).

III. DESCRIPTION OF MONITORING STATIONS

A. General Specifications

1. ***Monitoring Station Identification***

   Monitoring stations for sampling and observations specified in this MRP are described in this section, by station name and narrative description. The station name is used for reference in this MRP and in recording and reporting of monitoring information.

2. ***Monitoring Station Changes***

   Changes to the monitoring stations may be authorized by the Executive Officer, in accord with section I. C. "Monitoring and Reporting Program Changes," above, to accommodate changes in wastewater system equipment or operations, or to improve monitoring practices.

3. ***Facility Site Plan Showing Monitoring Stations***

   a. The Discharger shall develop a legible Facility Site Plan, based on a plan view drawing of the Facility, with labeled scale or dimensions, that clearly shows the locations of all major components of the wastewater system, monitoring stations, and relevant Facility and land features for reference such as buildings, roads, property boundaries, and water drainage systems. The Facility Site Plan may be comprised of a set of multiple, related, drawings.

   b. A copy of the Facility Site Plan shall be included with each annual report and with any reports about violations or monitoring station uncertainties.

B. Monitoring Stations

1. *Septic Tanks*

Septic tanks that discharge into the collection system tributary to the wastewater treatment system.

2. *Collection System*

All components of the wastewater collection system where inspection, maintenance, and observation activities occur.

3. *Treatment System Influent (INF)*

Wastewater at a point in the wastewater system where all wastewater tributary to the treatment system is present, and prior to treatment.

4. *Treatment System Effluent (EFF)*

Wastewater at a point in the wastewater system where all treatment by the constructed treatment system is complete and sampling provides representative characterization of the treated wastewater to be discharged to land.

5. *Discharge System Components*

a. The discharge system includes three distinct components, the Area 6 Subsurface Dispersal Field ("Leachfield"), the Scale House Drip Field, and the Scale House Spray Field.

b. Each of these systems will include an array of constructed equipment over an area of land, either subsurface or on the surface, and within that, multiple locations where monitoring observations, measurements or service activities may occur. For example, pipe valves, flow distribution boxes, observation tubes for subsurface installations, sprinklers, controls, fenced areas and gates. The Discharger shall report complete details of the final constructed discharge systems, as part of the "As-Built Plans" documentation addressed below at section VI.C. The Discharger shall also report specific locations within the discharge system where routine monitoring is planned to be conducted.

6. *Area 6 Leachfield - Groundwater Monitoring Wells*

Currently, there are six monitoring wells (MW-1 through MW-6) in and adjacent to Area 6 suitable for monitoring groundwater quality in the area of the discharges, and for monitoring changes and potential impacts to groundwater associated with leachfield discharges. The monitoring wells range in depth from 13 to 31.5 feet. One monitoring well is located upslope of the leachfield and the other five are downslope at various distances from the proposed dispersal areas.

These six wells shall remain in service, and along with a new monitoring well, tentatively, "MW-7," shall serve as the current set of groundwater monitoring wells for this Facility and MRP. Well MW-7 will be located near the easterly end of the Entrance Pond as requested by California Coastal Commission (CCC)

staff. The CCC and Regional Water Board will work together to approve final details and location of this well.

The monitoring wells, MW-1 through MW-7, shall be used for measurement of groundwater levels and water quality sampling. There are also twelve (12) additional groundwater observation wells (piezometers) adjacent to and near the proposed leachfield that may remain in service for supplemental water level measurements as needed, but not for water quality monitoring. At present, this MRP does not include specific requirements for monitoring at these piezometers.

Monitoring parameters and sampling frequencies for groundwater monitoring at Area 6 are given below at MRP section IV.G.1., *Area 6 Leachfield Groundwater Monitoring.*

7. *Scale House Drip Dispersal Area and Spray Field Area – Groundwater Monitoring*

Past field investigation work in the Scale House area included several shallow groundwater observation wells installed within and down-gradient of the proposed drip dispersal system and irrigation spray field. However, most of these have been destroyed by grazing cattle over the past several years. In conjunction with the establishment of the proposed winter drip dispersal field and summer spray irrigation field, new monitoring wells shall be installed for ongoing observation of groundwater levels and water quality sampling to assess any effects from the drip dispersal or spray irrigation operations. It is anticipated that this shall include one well located up-slope and two wells down-slope of both the drip field and spray field areas (6 total wells). These would all be shallow wells, no more than 10-feet deep.

Monitoring parameters and sampling frequency are tabulated below at section IV.G.2., *Scale House Drip Dispersal and Spray Field Area Groundwater Monitoring.*

8. *Entrance Pond – Surface Water Monitoring*

Sampling and analysis of surface water quality at the Entrance Pond shall be conducted periodically to provide on-going information and assessment of possible changes related to dispersal of treated wastewater in Area 6. The focus is expected to be on nitrate and other forms of nitrogen. There are also nine (9) shallow, hand-augured piezometers installed around the perimeter of the Entrance Pond that have been used to monitor and assess groundwater levels and flow directions. These piezometers will be maintained for future, on-going monitoring of groundwater conditions at the Entrance Pond.

Monitoring parameters and sampling frequency are tabulated below at section IV.H. *Entrance Pond – Surface Water Monitoring.*

IV. MONITORING REQUIREMENTS

A. Septic Tank Monitoring

1. *Septic Tanks and Grease Interceptors*

a. All septic tanks and grease interceptors shall be inspected, and serviced if needed, as frequently as necessary to assure continued proper operation.

b. Septic tank and grease interceptor inspection and servicing protocol and schedules shall be described in the Operation and Maintenance Manual (O&M Manual).

c. The standard frequency for septic tank inspection is once every year.

d. The standard frequency for grease interceptor inspection is once every three months.

e. Inspections shall include assessment of equipment conditions, containment integrity, accumulated solids, and the need for any services or repairs.

f. The following monitoring shall be implemented for each septic tank inspection, unless other equivalent facility-specific monitoring is specified in the O&M Manual:

   i. Vertical distance in inches of the depths of accumulated sludge, and floating scum layer, in each tank compartment.

   ii. Vertical distance, in inches, between the bottom of the floating scum layer and the bottom of tank outlet pipe (tee, elbow, or similar).

   iii. Vertical distance, in inches, between the top of accumulated sludge layer and the bottom of the tank outlet pipe (tee, elbow, or similar).

   iv. Effluent filter condition and service conducted.

g. Septic tanks shall be serviced to remove accumulated solids (sludge and scum) when any one of the following conditions exist, unless other equivalent facility-specific service criteria are given in the O&M Manual:

   i. The combined thickness of sludge and scum exceeds one-third of the liquid depth of the tank's first compartment;

   ii. The scum layer is within three (3) inches of the outlet device;

   iii. The sludge layer is within eight (8) inches of the outlet device; or

   iv. It is determined to be necessary based on the O&M Manual.

2. *Septic Tank and Grease Interceptor Service Summary*

The Discharger shall record all septic tank and grease interceptor service events for each year and shall report a summary of service events for the year, in the annual monitoring report. Information to report includes date, type of service, service provider, and destination of solids removed for off-site disposal.

B. Wastewater Flow Monitoring

1. Wastewater flows will be monitored at the treatment plant, at multiple locations:
    a. Influent flow-equalization tank,
    b. Treatment plant effluent lift station,
    c. Effluent dosing tanks at Area 6 Leachfield, and
    d. Effluent dosing tanks for the Scale House Drip Dispersal and Spray Field Areas.
2. Flows shall be monitored to determine the total daily flow in the system, and also the distribution of effluent flow among the different dispersal areas.
3. Flows shall be measured using in-line flow meters and/or flow calculation based on pump event counts, dose volume, and pump run-time data.
4. Flows shall be reported as total volume for each day and each month.

C. Treatment System Monitoring

1. ***Standard Monitoring Protocol***

    The treatment system shall be monitored as frequently as necessary to assure continued long-term proper operation and performance of the wastewater treatment processes and equipment.

2. ***Minimum Monitoring***

    The treatment system monitoring shall be conducted in accordance with the following tabulation of monitoring parameters and frequencies, for treatment system influent and effluent.

Table 1: Monitoring parameters and frequencies for the treatment system.

	Parameter	Units	Influent Frequency	Effluent Frequency
a	Flow Volume & Rate	gpd	Daily	Daily
b	Biochemical Oxygen Demand	mg/L	Monthly	Monthly
c	Total Suspended Solids	mg/L	Monthly	Monthly
d	Nitrate Nitrogen (as N)	mg-N/L	Monthly	Monthly
e	Total Kjeldahl Nitrogen	mg-N/L	Monthly	Monthly
f	Fecal Coliform	MPN/100 mL	Monthly	Monthly
g	Dissolved Oxygen	mg/L	N/A	Monthly

3. ***Additional Monitoring***

    The requirements given in this section are minimum monitoring practices. Additional monitoring may be desired or necessary to assure proper operation

and performance. Results of additional monitoring conducted for monitoring stations and parameters given in this MRP shall be reported in accordance with MRP section VI.A.3.d. Other additional monitoring conducted shall be explained in the monitoring reports, and the data shall be made available to the Regional Water Board upon request.

4. ***Representative Samples***

Effluent samples shall be taken at a location that provides representative characterization of the final treated wastewater from the recirculating filter treatment system, prior to discharge to the subsurface discharge system.

5. ***Monitoring Applicable to Treatment of RV Wastes***

The planned treatment system operation is for wastes from RVs to be discharged to a dump station holding tank, hydraulically separate from the recirculating filter treatment system, and later hauled away for legal off-site disposal. If the Discharger desires to allow RV wastes to be processed by the Facility, then the Discharger will need to submit a Report of Waste Discharge to request and address the proposed changes, and to describe proposed monitoring useful for evaluating treatment performance and desired effluent quality.

D. Recirculating Filter Treatment System Monitoring

1. ***Standard Monitoring Protocol***

All components of the recirculating filter treatment system shall be inspected for proper operation by a qualified service provider, as often as necessary to assure continued long-term proper operation and performance.

2. ***Filter Unit Inspection and Service***

The AdvanTex® recirculating treatment units shall be inspected and serviced in accord with manufacturer's recommendations, which shall be documented in a technical document reviewed and approved by the manufacturer, describing the operations and maintenance procedures for the treatment units. Inspections shall include observation of conditions and assessment for proper functioning of containment tanks, pumps, valves, vents, textile filter units (also called "pods") and control systems. These inspection and service events shall ordinarily be conducted quarterly, but may occur more frequently as needed.

3. ***Inspections and Maintenance Events***

A report of all inspections and any repair or maintenance activities shall be submitted with the next regularly scheduled monitoring report.

4. ***Recirculating Filter Operations***

   This information shall include measurements and or calculated parameters sufficient to characterize the performance settings of the recirculating filter units, such as recirculation ratio, volume recirculated (gallons per day), number of pump events per day, and or other data explaining the filter treatment unit current operational and performance settings.

E. Subsurface Discharge System (Leachfield) Monitoring

1. ***Standard Monitoring Protocol***

   The discharge and dispersal systems shall be monitored as frequently as necessary to assure continued long-term proper operation and performance of the wastewater treatment processes and equipment.

2. ***Minimum Monitoring***

   Minimum Monitoring shall include monthly observations for the following:

   a. Pumps and flow controls. All pump controls and flow distribution devices and controls shall be inspected for proper operation as recommended by the manufacturer.

   b. Nuisance Odor Condition.

   c. Saturated Soil. Inspect discharge area for saturated conditions.

   d. Vegetation. Observe vegetation throughout the discharge area. Note areas of unusual growth or other conditions that may indicate uneven distribution.

   e. Adverse Animal Impacts. Inspect for evidence of adverse impacts to the dispersal system or its proper functioning, due to uncontrolled animal activity such as burrowing in immediate vicinity of dispersal equipment, or chewing equipment, or trampling by heavy animals such as horses, sheep, or cows. Evidence of adverse impacts due to animal activity shall be investigated and reported along with resultant corrective actions taken.

   f. Water level in leachfield observation wells. Note the presence or absence of water in the observation tube. If water is present, then the water elevation shall be measured with respect to an identified reference elevation, and reported.

   g. Leachfield zones that are in active use, and zones in resting mode.

F. Scale House Spray Field Area – Land Application Monitoring

1. ***Standard Monitoring Protocol***

   The discharge systems and land application areas (LAA) shall be monitored as frequently as necessary to assure continued long-term proper operation and performance of the wastewater system. At a minimum, the Discharger shall monitor the LAA whenever wastewater is applied, and at least monthly for Observations of Current Conditions.

2. ***Minimum Monitoring***

Minimum monitoring shall include the parameters a through h shown in Tables 2 and 3.

Table 2: Monitoring parameters and frequencies for LAAs.

	Parameter	Units	Sample Type	Frequency
a	Wastewater Flow	gallons per day	Flow	Daily
b	Rainfall	inches	Collected	Monthly
c	Land Application Area	Acres	Measured	Monthly
d	Land Application Rate	volume/area/time	Calculated	Monthly

Table 3: Required Observations of Current Conditions for LAAs.

	Parameter	Units	Sample Type	Frequency
e	Soil Erosion	Observed, Yes or No	Observation	Monthly
f	Soil Saturation	Observed, Yes or No	Observation	Monthly
g	Nuisance Odors	Observed, Yes or No	Observation	Monthly
h	Off-site discharges	Observed, Yes or No	Observation	Monthly

3. ***Flow Reporting***

Flows shall be reported in monitoring reports as the following:

a. Daily flow for each day;
b. Monthly total volume; and
c. Average daily flow for the month.

4. ***Rainfall Data***

Rainfall data may be from nearby government-program precipitation-weather station. Report name and location of data station used. Report daily rainfall and monthly total.

5. ***Land Application Rate Data***

Land Application Rate may be reported in units of gallons/acre/month, inches/acre/month, or equivalent.

G. Groundwater Monitoring

1. *Area 6 Leachfield Groundwater Monitoring*

Groundwater monitoring at Area 6 Leachfield shall include sampling and analysis of water samples from Monitoring Wells MW-1 through MW-7, for the parameters and frequencies shown below.

Table 4: Groundwater monitoring parameters and frequencies.

	Parameter	Units	Sample Type	Frequency	Notes
a	Depth to Groundwater	0.01 feet, bgs	Measured	Monthly	(1)
b	Groundwater Elevation	0.01 feet, amsl	Calculated	Monthly	(2)
c	pH	Standard Units	Grab	Monthly	
d	Total Dissolved Solids	mg/L	Grab	Monthly	
e	Nitrate Nitrogen (as N)	mg/L as N	Grab	Monthly	(3)
f	Sodium	mg/L	Grab	Quarterly	
g	Chloride	mg/L	Grab	Quarterly	
h	Fecal Coliform	MPN/100 mL	Grab	Quarterly	

Notes:

(1) bgs = below ground surface.

(2) amsl = above mean sea level.

(3) Nitrate Nitrogen Monitoring Action Levels:

a. Nitrate Nitrogen Action Levels:

i. Action Level One: 7.0 mg/L as N, maximum, any single sample;

ii. Action Level Two: ≥ 7.0 mg/L as N, in any three consecutive samples;

iii. Nitrate Nitrogen Water Quality Objective: 10.0 mg/L as N, maximum

b. If Action Level One value is exceeded, conduct sampling for nitrogen at an increased frequency of once every two weeks.

c. If Action Level Two is exceeded, conduct a study of the problem and submit a technical report to the Regional Water Board describing the results of the investigation and proposed corrective actions, along with a time schedule for implementation of those actions. This report is to be submitted to the Regional Water Board no later than 30 days after the date when the action level exceedance was identified.

2. *Scale House Drip Dispersal and Spray Field Area Groundwater Monitoring*

Groundwater shall be monitored in the area of the scale house drip dispersal field and spray field by means of one well located up-slope and two wells down-slope of both the drip field and spray field areas (6 total wells). The details of these wells shall be specified in the Groundwater Monitoring Program Report described below at section IV.G.3.c. Monitoring parameters and sampling frequencies are tabulated below.

Table 5: Groundwater monitoring parameters and frequencies.

	Parameter	Units	Sample Type	Frequency	Notes
a	Depth to Groundwater	0.01 feet, bgs	Measured	Monthly	(1)
b	Groundwater Elevation	0.01 feet, amsl	Calculated	Monthly	(2)
c	pH	Standard Units	Grab	Monthly	
d	Total Dissolved Solids	mg/L	Grab	Monthly	
e	Nitrate Nitrogen (as N)	mg/L as N	Grab	Monthly	(3)
f	Sodium	mg/L	Grab	Quarterly	
g	Chloride	mg/L	Grab	Quarterly	
h	Fecal Coliform	MPN/100 mL	Grab	Quarterly	

Notes:

(1) bgs = below ground surface.

(2) amsl = above mean sea level.

(3) Nitrate Nitrogen Monitoring Action Levels:

a. Nitrate Nitrogen Action Levels:

i. Action Level One: 7.0 mg/L as N, maximum, any single sample;

ii. Action Level Two: ≥ 7.0 mg/L as N, in any three consecutive samples;

iii. Nitrate Nitrogen Water Quality Objective: 10.0 mg/L as N, maximum

b. If Action Level One value is exceeded, conduct sampling for nitrogen at an increased frequency of once every two weeks.

c. If Action Level Two is exceeded, conduct a study of the problem and submit a technical report to the Regional Water Board describing the results of the investigation and proposed corrective actions, along with a time schedule for implementation of those actions. This report is to be submitted to the Regional Water Board no later than 30 days after the date when the action level exceedance was identified.

3. *Groundwater Monitoring Program*

a. Groundwater Monitoring Program and Purpose

In order to provide ongoing characterization of groundwater quality in the vicinity of the discharges and to evaluate potential changes to groundwater associated with the discharges, the Discharger shall implement a program of ground water monitoring in the vicinity of the discharges, i.e., in the vicinity of the wastewater dispersal areas.

b. Program Components

This program shall include infrastructure and monitoring practices to implement the groundwater monitoring specifications given in parts 1 and 2 above, and the related monitoring stations given in part III. B., parts 6 and 7.

The program objectives include characterization of discharge area soils, ground water levels, movement and quality, and evaluation of any changes in ground water characteristics that may be attributable to the wastewater discharges. Potential changes to be addressed and evaluated include localized increase in ground water level (mounding), increase in the concentration of constituents of concern in the ground water, and migration of nitrate or other wastewater constituents into the ground water or offsite to existing or potential points of use. This program shall include measurement of groundwater levels and sampling of ground water for analytical characterization by means of constructed ground water monitoring wells located both up-gradient and down-gradient of the wastewater dispersal areas.

c. Groundwater Monitoring Program Report

The Discharger shall submit to the Regional Water Board a technical report providing complete description of the monitoring practices that shall be implemented. The report shall be acceptable to the Executive Officer, and shall be submitted no later than 30 days from the date of the NOA letter.

The report shall include the following:

(1) Identification and description of the groundwater monitoring wells to be used for monitoring groundwater in accordance with this NOA;

(2) Evaluation of the adequacy of those wells to provide up-gradient and down-gradient monitoring of ground water relative to the subject discharges and discharge areas;

(3) The means by which access to, and integrity of, the wells will be assured; and

(4) A summary review of ground water data obtained to date.

The report shall be acceptable to the Executive Officer, and the report shall be submitted no later than 30 calendar days from the date of the NOA letter.

d. Groundwater Monitoring Data Reports

The monitoring data obtained through the groundwater monitoring program shall be reported to the Regional Water Board in the quarterly and annual monitoring reports specified at MRP section VI.A. below.

H. Entrance Pond – Surface Water Monitoring

1. Sampling and analysis of surface water quality at the Entrance Pond shall be conducted periodically to provide on-going information and assessment of possible changes in pond water quality related to dispersal of treated wastewater in Area 6.
2. Monitoring parameters and sampling frequencies are tabulated in the table below.

Table 6: Entrance Pond monitoring parameters and frequencies.

	Parameter	Units	Sample Type	Frequency
a	Water Surface Elevation	0.01 feet, amsl	Staff Gauge	Monthly
b	pH	Standard Units	Grab	Monthly
c	Total Dissolved Solids	mg/L	Grab	Monthly
d	Nitrate Nitrogen (as N)	mg-N/L	Grab	Monthly
e	Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
f	Ammonia	mg/L	Grab	Quarterly
g	Temperature	degrees C	Grab	Quarterly
h	Dissolved Oxygen	mg/L	Grab	Quarterly

I. Sampling and Analysis Plan

The Discharger shall submit a *Sampling and Analysis Plan* consistent with the requirements of General Order Provision E.1.b.

V. CORRECTIVE ACTIONS

A. Increased Monitoring Frequency

The frequency of ordinary routine monitoring identified in this MRP shall be automatically increased in response to certain conditions.

1. If any monitoring indicates a discrepancy such as a violation of waste discharge requirements, exceedance of an applicable design criterion, unstable wastewater system operation or performance, or failure to complete minimum monitoring required by this MRP, then monitoring for the parameter(s) and monitoring station(s) in concern shall immediately be conducted, at a minimum, at the Increased Frequency identified as follows:

Standard Frequency	Increased Frequency
Quarterly	Monthly
Monthly	Every two weeks
Daily	Daily

2. The increased monitoring frequency shall be maintained for at least two sampling events.
3. The increased monitoring frequency shall be maintained until such time as the results of monitoring indicate that (a) violations are no longer occurring, and (b) that the problem has been corrected and the wastewater system has returned to stable operation and performance.
4. Increased monitoring frequency for groundwater monitoring with respect to Nitrate Nitrogen is specified in section IV.G., above.

B. Contingency Plan Evaluation

In the event that any design or performance criteria of the wastewater system are exceeded or appear likely to be exceeded in the near future, sampling frequency for relevant parameters shall be increased to a minimum of weekly, and wastewater treatment and disposal system operations and system components shall be evaluated to determine corrective actions necessary to return to compliance with the criteria. Such evaluation shall include assessment of the need to implement contingency plans for modifications of treatment and/or discharge practices.

VI. REPORTS TO BE SUBMITTED TO THE REGIONAL WATER BOARD

A. Monitoring Reports

The Discharger shall routinely submit to the Regional Water Board monitoring reports documenting the wastewater system operation and performance, and compliance with the waste discharge requirements and evaluation criteria, in accordance with the following:

1. ***Report Schedule***

   a. ***Quarterly monitoring reports*** shall be submitted to the Regional Water Board by the last day of the month following the monitoring period.

   b. ***Annual monitoring reports*** shall be submitted to the Regional Water Board by March 15 of the year following the monitoring period.

2. ***Letter of Transmittal***

   A letter of transmittal shall accompany each monitoring report submitted. The transmittal letter shall include the following:

   a. Identification of:

      i. The discharge facility by name and address;

      ii. The monitoring period being reported; and

      iii. The name and telephone number of a person familiar with the report and wastewater system, for follow up questions or discussions.

   b. Discussion of wastewater system operations and observations, and any unusual conditions or problems found during the reporting period. If any observation indicates a violation of waste discharge requirements or exceedance of evaluation criteria, then the following information shall be recorded and reported:

      i. Date and time of occurrence;

      ii. Location of occurrence. On a scaled plan drawing of the facility and/or site, show the location of the problem and, if applicable, affected land areas;

      iii. Description of the observed problem; and,

      iv. Corrective actions taken or planned to correct the problem, such as operation or facility modifications.

   If a report describing corrective actions and/or a time schedule for implementation of actions was previously submitted, reference to the report is satisfactory.

   c. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Discharger or the Discharger's authorized agent:

      "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. *Results of Analyses and Observations*

The report shall include the following:

a. Monitoring Results

Tabulations of the results from all required analyses, measurements and observations specified in this MRP, including identification of:

i. Date of sampling or observation;

ii. Location of sampling or observation (sample station);

iii. Parameter of analysis; and

iv. The result of the analysis, measurement or observation.

b. Data Presentation

In reporting monitoring data, the data shall be arranged in tabular form so that the data are clearly discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge is in compliance with the General Order and this MRP.

c. Sample Analysis Data

For all sample analyses, include the following:

i. Date of analysis

ii. Individual or contract laboratory conducting the analysis;

iii. Analytical procedure or method used, and test method detection level; and

iv. Copies of laboratory analysis result reports for any sample analyses conducted by a contract laboratory.

d. Report Additional Monitoring Results

If the Discharger monitors any parameter at the locations designated herein more frequently than is required by the General Order or this MRP, the results of such monitoring shall be included in the monitoring reports, and in any calculations of values.

e. Reporting Results Below Detection Limits

For all analytical characterizations (laboratory tests) for which results are identified as below limits of detection of the test procedure, data reporting shall include the limit of detection. In other words, reporting a sample test result as only "ND" or "not detected" or similar is not acceptable; the actual numeric value of the detection limit must also be reported. It is acceptable to use notations of non- detection - "ND" or similar - in data tables, provided that the corresponding limit of detection is clearly identified elsewhere in the table or as a footnote of the table.

4. ***Identification of Sampling and Observation Stations***

   A scaled and legible Facility Site Plan (described in section III.A.) showing locations of all sampling and observation stations shall accompany the first monitoring report under this MRP, subsequent reports when station locations are changed or a violation is reported, each annual monitoring report, and any reports about violations or monitoring station uncertainties.

5. ***Annual Monitoring Reports***

   The annual monitoring report shall include tabular and graphical summaries of the monitoring data obtained during the period being reported (calendar year). In addition, the report shall include a discussion of wastewater system performance and record of compliance with General Order and this MRP. If non-compliance is identified, the report shall also include discussion of corrective actions taken or planned to bring the discharge into full compliance.

6. ***Electronic Reporting***

   The Regional Water Board anticipates that improved electronic reporting methods and protocol will be available in the near future (one to five years). One such method is the State and Regional Water Board's GeoTracker electronic database, which is intended to facilitate upload of electronic data, as well as submittal of text documents such as pdf files.

   When an improved electronic reporting method becomes available, the Regional Water Board will inform affected Dischargers of the new required electronic reporting methods and protocol, including designated case-specific identification number, and Dischargers shall thereafter submit reports by way of the electronic reporting method.

B. Reports of Violations

In the event the Discharger violates, or threatens to violate the conditions of the waste discharge requirements due to: i) maintenance work, power failure, or breakdown of wastewater system equipment; ii) accidents caused by human error or negligence; or iii) other causes such as acts of nature; the Discharger or Discharger's agent(s) shall notify the Regional Water Board office by telephone as soon as the Discharger or Discharger's agent has knowledge of the incident.

Written notification shall be submitted within two weeks of the date of the incident, unless directed otherwise by Regional Water Board staff. The written notification shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

C. "As-Built" Plans of Completed Wastewater System

1. *"As-Built" Plans*

The Discharger shall submit a report to the Regional Water Board providing complete plan-view design drawings and related technical description of the completed wastewater system, and all of its components. This report shall be submitted no later than 30 days after completion of construction.

2. *Implementation Progress Reports – Quarterly*

Prior to completion of the proposed wastewater system infrastructure, the Discharger shall submit status reports about progress toward completion of the wastewater system, and toward completion of the "As-Built" documentation. These status reports shall be submitted quarterly, and shall be due no later than the 15th day of the month after the calendar quarter (i.e., submittal due dates of April 15, July 15, October 15, and January 15).

D. Regional Water Board Contact Information

The Regional Water Board's office mailing address, email, and telephone number information are given below. This is the address to be used for submittal of reports and correspondence to the Regional Water Board, unless directed otherwise.

1. Mail: San Francisco Bay Regional Water Quality Control Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612
2. Email:
   a. ***Monitoring Reports***. Monitoring reports and other related technical reports that are of moderate file size (no more than 10 MB) can be submitted electronically to the Regional Water Board as an attachment to an email submitted to the following email address: **wdr.monitoring@waterboards.ca.gov**.

   b. ***Email Notification***. Whenever a report is submitted to the above address, it is advisable to also send a short email notice about that submittal (without the attached report) to Regional Water Board case staff. Water Board staff email addresses use this format: <first name>.<last name>@waterboards.ca.gov.

3. Regional Water Board Telephone and Fax: *Telephone*: (510) 622-2300; *Fax*: (510) 622-2460

VII. MONITORING AND REPORTING PROGRAM CERTIFICATION

The Discharger shall implement this Monitoring and Reporting Program as of the effective date given below.

I, Michael Montgomery, Executive Officer, hereby certify that this Monitoring and Reporting Program:

1. Has been developed in accordance with the procedure set forth in the Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements for the subject wastewater systems.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective on the following date: <effective date> .

Ordered by:

for Michael Montgomery

Executive Officer