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

**ORDER NO. R2-2015-00XX**
**WASTE DISCHARGE REQUIREMENTS FOR:**

**TOMALES VILLAGE COMMUNITY SERVICES DISTRICT and the TOMALES VILLAGE COMMUNITY SERVICES DISTRICT WASTEWATER TREATMENT PLANT**
**10 IRVIN ROAD, TOMALES, MARIN COUNTY**

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

1. **Discharger.** Tomales Village Community Services District (the Discharger) is a government agency dedicated to operating and maintaining the Tomales Village Community Services District Wastewater Treatment Plant (Facility) that serves approximately 100 residences in Tomales, California, less than ten commercial businesses and restaurants within the community, and the Shoreline Unified School District located in Tomales. The Discharger is legally responsible for the wastewater system and the discharges of wastewater to land regulated by this Order, and for compliance with this Order. The wastewater system is managed and operated by wastewater treatment operators employed by the Discharger.

2. **Purpose of Order.** The purpose of this Order is to update Waste Discharge Requirements (WDRs) to reflect current conditions at the Facility, including, but not limited to, the following:
    a) Updated regulatory requirements;
    b) Facility improvements, including conversion into a three-stage pond treatment system, installation of a sand and grease interceptor, and upgrade of the discharge system;
    c) Permitted change from seasonal to conditional discharge to the discharge area (by this Order);
    d) Discontinued discharge of wastewater to the school district irrigation ponds; and
    e) Changes to the self-monitoring program since the WDRs were last issued in 1986.

    This Order also rescinds previous Water Board Order No. 86-086.

3. **History of the Order.** The Discharger previously treated and discharged wastewater pursuant to Board Order No. 86-086, Water Reclamation Requirements for North Marin County Water District - Tomales Sewage Treatment Plant, Town of Tomales, Marin County, adopted on November 19, 1986. The previous owner and operator of the Facility, the North Marin County Water District, transferred ownership of the Facility to the Discharger on April 20, 1999.

4. **Report of Waste Discharge**. The Discharger submitted a renewed Report of Waste Discharge (ROWD) for the Facility, dated September 28, 2001, to apply for reissuance of the WDRs to reflect the operational changes in the Facility's wastewater system. The Facility operated in compliance with the renewed ROWD under California Water Code (CWC) section 13264. This Order addresses the changes described in the 2001 ROWD and subsequent changes and upgrades to the original system. This Order authorizes waste discharge requirements for the system that is in place and operating at the time of this Order.

5. **Waste Discharge Requirements**. This Order prescribes waste discharge requirements for the current, upgraded Facility and supersedes Order No. 86-086.

**Site Description and Location**

6. **Discharge Origin and Facility Location.**
    a. **Tomales**. The 0.33 square-mile town of Tomales (Tomales), including the Shoreline Unified School District, is situated in the Coast Range of northwest Marin County, approximately three miles northeast of Tomales Bay. Tomales is located in between Stemple Creek, approximately 1.5 miles to the north, and Keys Creek immediately to the south.

    b. **Facility Location**. The Facility is located northeast of the intersection of State Route 1 and Tomales-Petaluma Road, in northwestern Marin County, within Tomales.

    Attachment A of this Order is a plan view drawing depicting the location and boundaries of the Facility.

**Wastewater System Design, Construction, and Operation**

7. **Wastewater System Overview**. For purposes of this Order, the wastewater system is comprised of all equipment, control, and monitoring systems located on the Facility that provide collection, conveyance, treatment, storage, and discharge of wastewater entering the Facility.

    Attachment B of this Order is a flow diagram illustrating the current wastewater treatment and discharge processes and flows.

8. **Wastewater Sources and Flows**. Wastewater is generated from the Tomales residences and the Shoreline Unified School District as sanitary wastewater. The design flow capacity of the three-stage treatment pond system, and maximum inflow rate authorized by this Order, is 43,000 gallons per day.

9. **Collection System**. The collection system consists of approximately 2.6 miles of six- and eight-inch-diameter gravity sewer mains. The collection system includes one lift station, equipped with two grinder sewage pumps capable of delivering 22 gallons per minute of influent. One pump acts as a standby unit and is used in the event that the primary pump becomes inoperable. The collection system is permitted not under this Order, but under the General Order for Sanitary Sewer Systems (see Finding 37).

    Attachment C of this Order is a map of the district boundaries and collection system.

10. **Comminutor.** Collected wastewater influent flows first into the comminutor for screening of larger solids as primary treatment. The comminutor cuts and shreds particles in the influent, reducing the material to a size that will pass through ¼-inch wide slots. On a weekly basis, operators manually remove the larger solids screened out by the comminutor (see Discharge Specification 11).

11. **Fats, Oils, and Grease (FOG) Interceptor.** Wastewater is conveyed downstream for further primary treatment in a 2000-gallon Selvage three-chamber sand and grease separation unit, after the comminutor and in line before the three-stage treatment pond system influent pipe. The interceptor unit screens and detains solids and fats, oils, and grease, before the influent goes to the first pond of the three-stage treatment pond system. The fats, oils, and grease interceptor is serviced quarterly: a licensed septic waste hauler removes accumulated solids and takes them off-site for disposal (see Discharge Specification 11).

12. **Three-stage Treatment Pond System.**
    a. **Facility Upgrade**. In spring 2010, the Discharger completed improvements to the treatment facilities, resulting in three lined and mechanically-aerated ponds. The Discharger converted the original sand filter in existence in 2010 into the first treatment pond. The treatment lagoon in existence in 2010 was divided into two additional treatment ponds, plumbed in series with the first pond. All three ponds were lined with a 30-year Hypalon (chlorosulfonated polyethylene synthetic rubber) liner. The combined capacity of the three ponds is approximately 1.3 million

gallons, with two feet of freeboard.

b. **Pond Order**. The first pond receives the primary influent from the FOG interceptor. The first pond is the first stage of the treatment pond system and provides secondary treatment through aeration and settling. The second pond increases the secondary treatment through further aeration and settling. The third pond, though also equipped with an aerator, is usually not aerated: it passively functions as the settling and polishing pond before conveyance of the secondary effluent to the storage ponds.

c. **Back-up Aeration System.** The three ponds of the new three-stage treatment pond system are each equipped with an aerator. The system incorporates a back-up aeration system: in the event that an aerator becomes inoperable, the order of the ponds may be reconfigured such that the remaining functioning aerators in the pond can provide optimal mixing characteristics and oxygen to prevent the pond from becoming anaerobic and causing an odor problem. Further, the stage order of all three ponds may be reconfigured according to attachment D to accommodate for any temporal dysfunctions or non-operation in any part of the system.

Attachment D of this Order is an illustration of the components and specifications, and an overview of the permitted configurations of the three-stage treatment pond system.

13. **Lift Station**. The Facility has one lift station, located at the intersection of State Route 1 and Tomales-Petaluma Road. The lift station pumps secondary wastewater effluent from the three-stage treatment pond system to the storage ponds. The Facility uses two Gould 5CLC 15 horsepower pumps, which are set to operate on a rotating basis for equal wear and redundancy, and can be used in tandem if necessary.

14. **Storage Ponds**. The Facility pumps treated secondary effluent from the three-stage treatment pond system to the two storage ponds: West Pond and East Pond. The effluent may be directed into either or both ponds at any time. The two storage ponds are both clay-lined ponds, with a combined maximum storage capacity of 10.1 million gallons. They occupy a 10-acre site south of the Tomales-Petaluma Road, south of the three-stage treatment pond system, directly north of the discharge area.

15. **Disinfection.** A diffuser located in the discharge pipe mixes liquid sodium hypochlorite into the secondary effluent, conveyed from the storage pond(s), for disinfection before discharge. The secondary effluent and chlorine solution are mixed in the discharge pipe for a contact period of approximately twenty-seven minutes. The disinfected secondary effluent is then pumped onto the discharge area via spray irrigation.

16. **Discharge Area.** Disinfected wastewater is discharged to land via spray irrigation onto a 21-acre vegetated gently sloping hillside field, fenced and gated, located downhill of the storage ponds, and about 3,600 feet south of the wastewater treatment ponds. This irrigation field is also known as the discharge area for the Facility. The irrigation field is occasionally grazed by neighboring steers.

17. **Collection Ditch**. A runoff collection ditch surrounding the irrigation field prevents effluent runoff from discharging off-site and also intercepts the rainfall run-on from adjacent fields. A collection sump at the base of the irrigation field will send an alarm to the programmable logic controller to automatically shut off the irrigation pumps if the water level reaches a level predefined by the operators. As a result of these operational controls, the ditch has never overflowed, even during a 50-year storm in 2006.

18. **Discharge System**. The irrigation system has eight zones fitted with seven large nozzle type guns, with one converted to two lines with an array of 35 Rain Bird sprinklers. Each of the eight zones is rated to deliver 80-100 gallons per minute, spreading the effluent over a large area. Each zone can be programmed to run multiple cycles. The entire irrigation system is integrated into the system-wide Supervisory Control

and Data Acquisition (SCADA) system with predefined alarm call-out points and remote access for emergency shut-down or reconfiguration of irrigation time and cycles.

19. **Discharge Operations.**
    a. **Past Seasonal Operation**. Board Order No. 86-086 authorized seasonal operation of the Facility irrigation field. Under that Order, reclaimed water cannot be applied during the wet weather season (November 15 through April 15, as defined by that Order), when the ground is saturated, or during periods when rainfall or runoff from adjacent land can occur. The irrigation system at the time of the issuance of this Order is operated under Order 86-086 via an automatic timer during the dry season and discharges approximately 25,000 gallons per day on average, for the months when discharge occurred, based on 2012-2013 daily and weekly effluent discharge data.

    b. **"1998 Winter Irrigation Plan" for Emergency Discharges.** In 1998, Water Board staff approved the Facility's "1998 Winter Irrigation Plan," which allowed for the release of emergency discharges via spray irrigation from the storage ponds to the irrigation field during the wet weather season (November 15 through April 15). These releases have allowed for the maintenance of safe water levels in the storage ponds from 1998 until the time of this Order.

    c. **Change from Seasonal to Conditional Discharge**. This Order rescinds the Winter Irrigation Plan (and Order 86-086) and authorizes a change in the discharge system operation from seasonal discharge to conditional discharge to preclude uncontrolled runoff and the need for emergency discharge during rainfall periods, and maintain appropriate holding capacity for the storage ponds. The conditional discharge operation allows the Discharger to manage discharges of treated wastewater in accordance with prevailing environmental conditions instead of the former fixed-calendar basis. This Order includes requirements for control of all discharges, including complete treatment, final effluent quality in compliance with the Order, and assessment of soil, weather and discharge conditions to prevent ponding or runoff. Discharge from the storage ponds to the irrigation field is not authorized if it is determined that ponding or runoff from the site would occur (see Discharge Specification 3).

20. **Recycled Water Feasibility Study**. In 2009, the Discharger conducted a Wastewater Treatment Plant Water Reclamation & Reuse Tertiary Treatment Feasibility Study. The study was initiated to assess the feasibility for a proposed Tertiary Treatment and Recycling Project, a joint plan with the Shoreline Unified School District to construct a filtration and disinfection system to produce tertiary treated water for recycling and reuse to supplement the school's water needs and to help replenish the groundwater in the Tomales Bay Watershed. The Discharger concluded, based on the results of the study, that the project is infeasible, given the project capital outlay.

**Surrounding Environment of the Facility**

21. **Facility Characteristics.** The Facility is located on property that is primarily characterized by agricultural or rural land use, consisting of chaparral, Oak and Bay woodland, and coastal scrub vegetation types. The geology of the 0.33 square-mile Tomales area is referred to as the "Franciscan Complex," which is generally described as an overlying 10- to 15 foot-thick layer of unconsolidated materials and soil with colluvium accumulation in the valleys and hillsides. In the proximity of Tomales, an undifferentiated Pilocene Marine geologic formation, known as "Wilson Grove," overlies the Franciscan complex. The 135 square-mile Wilson Grove Formation Highlands groundwater basin underlies the Facility.

    **Climate and Surroundings.** Tomales lies within the Walker Creek watershed, which receives approximately 35 inches of precipitation per year, consistent with the Mediterranean climate of the central coast of California. The watershed receives higher-intensity rain from November through March, comprising 85 percent of the annual rainfall within the watershed. Walker Creek, a tributary to Tomales Bay, is located 1.5 miles from the southwestern boundary of the Facility. Keys Creek, a tributary to

Walker Creek, lies immediately south of the three-stage treatment pond system. See Finding 34 for further information on surrounding waters of the State.

22. **Groundwater Quality Characteristics**. A state-wide groundwater ambient monitoring and assessment program (GAMA) collects data for local and area-wide groundwater quality characterization. Searching in GAMA for the one-mile radius around the Facility returned 41 sampling events conducted at 10 wells, from 1999 to 2014. The values for nitrate-nitrogen ranged from 0 to 19 mg/L, with a median value of 2.0 mg/L. The drinking water maximum contaminant level for nitrate-nitrogen is 45 mg/L. The underlying Wilson Grove Formation Highlands groundwater basin is listed with existing beneficial use for municipal and domestic water supply, as well as agricultural water supply (see Finding 34). The groundwater basin is listed with potential beneficial use for industrial process water supply and industrial service water supply.

**Discharge Characteristics**

23. **Discharges**. The waste discharges to land addressed by this Order consist of domestic and commercial wastewater from the approximately 100 residences of Tomales and 500-student Shoreline Unified School District located at 10 John Street in Tomales. As described above, secondary effluent is conveyed from the collection system to the three-stage treatment system and then via one four-inch force main connecting the third pond of the three-stage treatment pond system to the two storage ponds located south of the three-stage treatment pond system on the Facility. The secondary effluent is then disinfected and discharged from the storage ponds as irrigation for the adjacent 21-acre pasture. No effluent is discharged via any other system or process, and there is no discharge to surface water(s).

24. **Discharge Quantity.** The current average inflow to the Facility is approximately 16,900 gallons per day, based on 2012-2013 data. The design inflow capacity of the Facility three-stage treatment pond system as provided in the Discharger's Operation and Maintenance Manual and authorized by this Order is 43,000 gallons per day on an annual basis.

    This Order authorizes an annual wastewater flow limit of 15,738,000 gallons per year, based on an average dry weather flow value of 43,000 gallons per day and 366 days. For reference, wastewater flows (influent and effluent, when applicable) from January 2012 through December 2013 are tabulated below.

| Month-Yr | Influent Month Total (gallons) | Influent Average Day (gallons) | Influent Peak Day (gallons) | Effluent Month Total (gallons) |
|---|---|---|---|---|
| Jan-12 | 534,000 | 17,200 | 46,000 | 0 |
| Feb-12 | 417,000 | 14,900 | 18,000 | 0 |
| Mar-12 | 696,000 | 23,200 | 61,000 | 0 |
| Apr-12 | 649,400 | 21,600 | 35,600 | 0 |
| May-12 | 474,000 | 15,300 | 20,000 | 784,000 |
| Jun-12 | 407,000 | 13,600 | 17,000 | 990,000 |
| Jul-12 | 436,000 | 14,000 | 18,000 | 1,229,000 |
| Aug-12 | 389,000 | 13,000 | 16,000 | 751,000 |
| Sep-12 | 426,000 | 14,200 | 18,000 | 508,000 |
| Oct-12 | 513,000 | 16,500 | 19,000 | 0 |
| Nov-12 | 611,000 | 20,400 | 76,000 | 0 |
| Dec-12 | 1,240,400 | 40,000 | 87,000 | 0 |
| Jan-13 | 621,000 | 20,000 | 30,000 | 0 |
| Feb-13 | 380,000 | 13,600 | 21,000 | 0 |

| | | | | |
|---|---|---|---|---|
| Mar-13 | 415,000 | 13,400 | 21,000 | 0 |
| Apr-13 | 459,000 | 15,300 | 25,000 | 262,000 |
| May-13 | 424,000 | 13,700 | 16,000 | 761,000 |
| Jun-13 | 414,000 | 13,800 | 19,000 | 753,000 |
| Jul-13 | 759,000 | 24,500 | 28,000 | 979,000 |
| Aug-13 | 426,000 | 13,700 | 17,000 | 1,006,000 |
| Sep-13 | 411,000 | 13,700 | 17,000 | 428,000 |
| Oct-13 | 432,000 | 13,900 | 17,000 | 561,000 |
| Nov-13 | 393,000 | 13,100 | 15,000 | 0 |
| Dec-13 | 428,000 | 13,800 | 15,000 | 0 |

-- indicates no effluent discharge occurred during the entire month.

**25. Discharge Quality for 2012-2013.** Results from routine sampling (per the Self-Monitoring Program of Board Order No. 86-086) of the final effluent discharged into the irrigation field are summarily presented below:

| **Month-Yr** | **pH range** | **Dissolved Oxygen range (mg/L)** | **Chemical Oxygen Demand range (mg/L)** | **Total Coliforms range (MPN/100ml $H_2O$)** |
|---|---|---|---|---|
| *Order 86-086 limits* | *≤ 6* | *≥ 1.0* | *≤ 210* | *≤ 240* |
| May-12 | 8.1 - 8.9 | 2.1 - 3.2 | 120.0 – 170.0 | < 2 – 4 |
| Jun-12 | 7.9 - 8.5 | 3.0 - 30.0 | 130.0 – 220.0 | < 2 |
| Jul-12 | 8.2 - 9.1 | 2.0 - 3.7 | 170.0 – 250.0 | 14 – 240 |
| Aug-12 | 7.9 - 9.0 | 3.0 - 3.6 | 190.0 – 270.0 | < 2 – 22 |
| Sep-12 | 6.0 - 9.7 | NA | 130.0 – 220.0 | 4 – 170 |
| Apr-13 | 8.4 - 8.9 | 2.2 - 2.3 | 88 | < 2 |
| May-13 | 8.8 - 9.6 | 2.3 - 4.8 | 120.0 – 130.0 | < 2 – 240 |
| Jun-13 | 8.7 - 9.2 | 2.0 - 4.6 | 120.0 – 130.0 | 120 - 130 |
| Jul-13 | 8.4 - 9.5 | 1.0 - 4.3 | 3.5 – 130.0 | 2 – 50 |
| Aug-13 | 8.5 - 9.5 | 2.0 - 2.8 | 170.0 – 290.0 | < 2 – 59 |
| Sep-13 | 8.7 - 9.6 | 2.0 - 2.1 | 185.0 – 470.0 | 4 – 900 |
| Oct-13 | 9.7 – 9.9 | 3.5 – 5.8 | 230.0 – 510.0 | < 2 - 26 |

NA denotes the information is missing in the Monthly Self-Monitoring Report.

**Exceedances**. These sampling results indicate several instances of exceedances. For the sampling period of January 2012 – December 2013, the Discharger commented on and addressed the exceedance, as a component of the Monthly Self-Monitoring Report, citing the sampling date and location, specific non-compliance event, probable cause (if determined by the Discharger), and the corresponding corrective action. Since the upgrade to the entire wastewater system in spring 2010, there has been no evidence of repeating patterns of either violations or violations without corrective actions. Water Board staff reviewed the self-monitoring reports, found the corrective actions taken to be acceptable, and determined that no further regulatory actions are necessary.

**Monitoring**

26. **Remote System Monitoring.** The Facility includes a remote wastewater monitoring SCADA system. The SCADA system provides continuous monitoring of the three site locations: the three-stage treatment pond system, the lift station, and the irrigation field and storage ponds. The SCADA system monitors and controls the pond levels, the starting and stopping of aerators and lift pumps, the timing of the irrigation, and transmits notification of any pre-set alarms to the operators.

27. **Wastewater Monitoring.** Wastewater flows are currently monitored for total daily flow into the stage one treatment pond and daily effluent discharge (when applicable) from the storage ponds into the irrigation field. This Order contains a Self-Monitoring Program (see Attachment E) that requires wastewater quantity and quality monitoring at defined points throughout the wastewater system in order to ensure proper operation and performance of the system and to document compliance with these requirements.

28. **Chemical Oxygen Demand Effluent Quality Limitation**. When the previous Order (Board Order No. 86-086) was issued, the common constituent for monitoring and measuring wastewater strength was chemical oxygen demand (COD). The Facility has since complied with Order No. 86-086 by measuring COD. More recently, however, biochemical oxygen demand (BOD) has become the standard of choice for measuring wastewater strength.

    **Authorization to Continue Measuring COD**. Correspondence with the Discharger, from May 2014, revealed its preference to continue measuring COD. The Water Board can allow replacement of BOD analysis with COD analysis for measuring wastewater strength, if the Facility demonstrates a long-term correlation (as described in federal effluent guidelines for secondary treatment regulation, 40 CFR 133.104b). Therefore, this Order permits the continuance of the COD limit of 210 mg/L as designated in Order 86-086, during the year-long process of demonstrating a long-term correlation, and afterwards, if Water Board staff determines the correlation to be acceptable. The completed correlation report should be included in the Annual Monitoring Report (see Attachment E, VI.A.5.b).

**Operation and Maintenance**

29. **Operation and Maintenance.** At the time of this Order the wastewater system is managed by operators employed by the Discharger. This Order requires the wastewater system to be operated and maintained by certified wastewater treatment plant operators that are experienced in and knowledgeable of the wastewater system design and proper operation. The certified wastewater treatment plant operator may be an employee of the Discharger or a contract employee.

30. **Operation and Maintenance Program.** An Operation and Maintenance (O&M) Program is needed in order to ensure that all aspects of the wastewater system are properly operated and maintained. The O&M Program must include descriptions of all wastewater system components and equipment, accurately dimensioned site plans identifying the locations of all components and relevant site features (e.g., buildings, wells, drainage ways, roads, etc.), recommended strategies and procedures for system operations in accordance with system designs and discharge requirements, procedures and criteria for process control monitoring, maintenance activities necessary to ensure continuous proper operation of the wastewater system, and identification of persons responsible for operation and maintenance of the wastewater system and how these persons can be contacted. This Order requires development and implementation of an O&M Program acceptable to the Executive Officer and preparation and submittal of an O&M Manual that fully describes the O&M Program for the current system.

**Applicable Plans, Policies, and Other Authorities**

31. **California Water Code.** This Order serves as waste discharge requirements (WDRs) pursuant to California Water Code Division 7, Chapter 4, Article 4 (commencing with section 13260).

32. **Basin Plan.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water 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 Water Board and approved by the State Water Resources Control Board, Office of Administrative Law and the U.S. EPA, where required.

33. **Basin Plan Implementation.** The Basin Plan contains water quality objectives and beneficial uses for waters of the State within the San Francisco Bay Region, and an Implementation Plan. This Order includes prohibitions and discharge requirements to protect existing and potential beneficial uses of waters of the State, in the surrounding area of the Facility and its operations, as well as to protect public health and the environment.

34. **Beneficial Uses of Waters of the State.** The Discharger discharges the final effluent onto land, not into surface water(s). The final effluent is discharged onto the irrigation field via spray irrigation. The irrigation field is located over the Wilson Grove Formation Highlands groundwater basin. The existing and potential beneficial uses of Wilson Grove Formation Highlands groundwaters, underlying the area of Tomales, as set forth in the Basin Plan include the following:

    1. Municipal and domestic water supply
    2. Industrial process water supply
    3. Industrial service water supply
    4. Agricultural water supply

    At the time of this Order, there are no known domestic water supply wells less than or equal to 100 feet from any point of the discharge area. Upstream of the irrigation field, the influent undergoes treatment at the three-stage treatment pond system. The treatment pond system is bounded to the South by Keys Creek. Keys Creek is a tributary to Walker Creek, which flows into Tomales Bay. The confluence with Walker Creek lies within 1.5 miles southwest of the system. This Order permits discharge to groundwaters, and it prohibits discharges to surface waters. Therefore, the waters of the State in the vicinity of the Facility will not be impacted by discharges permitted by this Order.

35. **Shellfish Protection Act.** In Board Resolution No. 94-018, as a result of the 1993 Shellfish Protection Act, the Water Board identified Tomales Bay as an area where the commercial shellfish growing areas are threatened. This Order is consistent with upholding the Shellfish Protection Act in authorizing waste discharge requirements for a facility that is configured for zero discharge to surface waters, to protect water quality for the preservation of shellfish and shellfish habitats.

36. **Tomales Bay TMDL.** Tomales Bay and its tributaries have been identified as impaired and have been placed on the federal Clean Water Act 303(d) list of impaired waters for nutrients, sediment, and pathogens. The Water Board is required to establish a Total Maximum Daily Load (TMDL) for these pollutants. The U.S. EPA approved the TMDL for pathogens in the Tomales Bay watershed on February 8, 2007. The basis for the TMDL pathogen listing includes exceedances of the numeric water quality objectives for fecal and total coliforms for the shellfish and recreational beneficial uses. Tomales Bay supports the third largest shellfish harvesting area in the State. The waste material at this Facility could potentially be a source of nutrients and pathogens to the watershed if an unintended release occurred (e.g., as a result of flooding or a mechanical failure). The Discharger is aware of the TMDL and the Facility is configured to have zero discharge to surface waters. This Order prohibits any discharge to surface waters or to groundwaters that connect to surface waters to prevent any additional impacts to Tomales Bay.

    **Facility Upgrade Addresses Historical Concern for Surface Water Quality Impacts**. The Facility is configured for zero discharge to surface waters. In 2007, in response to concerns about the adjacent Keys

Creek, the Discharger contracted an engineer to conduct seepage tests on the treatment lagoon area (converted to two treatment ponds in 2010) to evaluate the present and future effects of the natural migration of Keys Creek. The results of the third-party observation-based assessment indicated no significant level of seepage impact from the natural migration of Keys Creek to the treatment pond system for another 80-100 years if nothing changes. Additionally, in spring 2010, the Facility implemented improvements to the Facility that included conversion to the three-stage treatment pond system and lining all three treatment ponds with manufactured, impermeable 30-year Hypalon liner. Improvements also included installing a sub-drain below each treatment pond, with plumbing to direct any pond or external water collection into the third pond of the three-stage treatment pond system. The added liner and sub-drain prevent the natural erosion of Keys Creek from impacting the stability of the treatment pond system. These improvements also preclude any unintended discharges from the treatment pond system area into the surface waters of the State.

37. **General Order for Sanitary Sewer Systems.** Order No. 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" (General Order), applies to all public agencies that own or operate sanitary sewer systems greater than one mile in length. This finding serves to acknowledge that the Discharger's collection system is enrolled and regulated under the General Order.

**Antidegradation Policy Analysis**

38. **Antidegradation Policy.** State Water Board Resolution No. 68-16 (the Antidegradation Policy) requires that the Regional Water Board, in regulating the discharge of waste, must maintain the high quality of waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that described in the Regional Water Board's policies (e.g., quality that exceeds water quality objectives). Resolution No. 68-16 also requires that any activity which produces wastes and discharges waste to existing high quality water(s) be required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to ensure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. Resolution No. 68-16 prohibits degradation of water quality as it existed in 1968, or at any time thereafter that water quality was better than in 1968, other than degradation that was previously authorized. An antidegradation analysis is required for regulatory actions that result in a significant increase in pollutant loadings.

39. **Antidegradation Analysis**. This Order authorizes no significant changes in the Facility's effluent discharge volume or pollutant concentrations. Some changes due to water conservation practices or variable rainfall may occur. Based upon evaluation of Facility self-monitoring reports since the system upgrade in spring 2010, Regional Water Board staff conclude that the Facility's discharge to land will not unreasonably affect present and anticipated beneficial uses of the groundwater or nearby surface waters, and will not result in water quality less than that prescribed in the Antidegradation Policy.

    a. **Protection of Surface Waters**. This Order prohibits discharges either directly or via migration to surface waters, so existing and potential beneficial uses of nearby surface waters will not be affected. There is no reason to believe that existing water quality of nearby surface waters will be reduced due to the implementation of this Order. Therefore, no antidegradation analysis is required for surface waters.

    b. **Protection of Groundwaters**. The only permitted effluent discharge is to land via spray irrigation. The wastewater system serves domestic and commercial flow with zero industrial flow and discharge to a remote irrigation field, where the influent will infiltrate into the ground. Further, the irrigation field is surrounded by a perimeter ditch to prevent any off-site discharges, in case of runoff from the site. The ditch is also equipped with a collection sump with a water level alarm, which will shut down all Facility operations if the water reaches a level

predetermined by the operators. Each pond within the three-stage treatment pond system is lined with an impermeable liner and plumbed to direct any seepage collection into the third pond. The reported monthly monitoring data for the Facility demonstrate that the Facility supports existing and potential beneficial uses of the waters of the State adjacent to and underlying the Facility site. Due to the nature of the discharge (to land via irrigation) and the measures established for pollution prevention, the operations of this Facility under this Order are not expected to reduce existing high quality waters.

c. **Groundwaters Listed as "Very Low" Priority Source of Water**. In spring 2014, the California Department of Water Resources evaluated the characteristics of groundwater basins through a statewide assessment of the overall importance of the groundwaters in meeting urban and agricultural demands. The Wilson Grove Formation Highlands groundwater basin is ranked as "very low" priority, indicating that the basin has less than 0.03 acre-feet/acre of groundwater use and less than 0.1% of the statewide total water supply is sourced from the basin. Water Board staff conclude that based on these groundwater basin characteristics, as well as the discharge volume and final effluent quality, the Facility's authorized discharge is in compliance with the Antidegradation Policy and should not degrade the water quality of the groundwater basin.

**Safe Drinking Water Act**

**40.** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order upholds that policy by requiring limits on discharges that will ensure groundwater does not exceed maximum contaminant levels designed to protect human health and that water is safe for domestic use.

**California Environmental Quality Act (CEQA)**

**41. CEQA.** The issuance of waste discharge requirements for the subject discharges is exempt from the provisions of CEQA pursuant to Title 14, Division 6, Chapter 3, Section 15301 (existing facilities) and Section 15302 (replacement or reconstruction) of the California Code of Regulations.

**Notification and Public Meeting**

**42. Public Notice.** The Board has notified the Discharger and interested persons of its intent to prescribe waste discharge requirements for the subject wastewater system and discharges and has provided them with an opportunity for a public hearing and to submit written views and recommendations.

**43. Public Hearing.** The Board, in a properly noticed public hearing, heard and considered all comments pertaining to these waste discharge requirements.

**IT IS HEREBY ORDERED**, that the Discharger, pursuant to the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

**A. PROHIBITIONS**

**1.** The treatment, storage, or discharge of wastes shall not create a nuisance or pollution as defined in the California Water Code, section 13050.

**2.** Discharges of waste into or from the wastewater system other than as described in and authorized by this Order are prohibited.

**3.** There shall be no direct or indirect discharge to surface waters.

**4.** There shall be no discharge of waste that has not undergone the full treatment process, according to the flow schematic in Attachment B and the permitted treatment pond configurations as described in Attachment D, to groundwaters of the State from the Discharger's wastewater collection, treatment, storage, or discharge facilities.

**5.** The discharge of waste shall not degrade the quality of any groundwater used for domestic purposes or cause an increase or decrease in any quality parameter that would make groundwater unsuitable for any listed existing or potential beneficial use(s).

**6.** Wastewater shall not be allowed to flow from the discharge area via surface flow, airborne spray, or surfacing after percolation.

**7.** Discharge of treated wastewater to any land other than the designated discharge area is prohibited.

**8.** Migration of pollutants through subsurface transport from the discharge area(s) to waters of the State is prohibited.

**9.** Discharges of wastewater to the wastewater system in excess of the system operating hydraulic capacity or organic loading treatment capacity are prohibited.

## B. DISCHARGE SPECIFICATIONS

**1. Source Wastewaters.** The only wastewater authorized by this Order to be discharged into the wastewater system consists of wastewater from commercial and residential domestic use in the Tomales area and the Shoreline Unified School District. The Discharger must apply for amended WDRs before accepting any other kind of wastewater.

**2. Treatment and Storage Ponds**

a. Freeboard. A minimum freeboard of two feet shall be maintained in the ponds at all times.

b. 100-Year Flood. The ponds shall be adequately protected from erosion, washout, and flooding from the maximum flood having a predicted frequency of once in 100 years.

c. Treatment Pond Lining. The treatment ponds shall be lined with a geotextile fabric or other materials with a permeability of no more than $10^{-6}$ cm/sec.

d. Treatment Pond Aerators. Each of the three aerated ponds (within the three-stage treatment pond system) shall be equipped with one or more aerators in order to provide sufficient aeration capacity to achieve biological stabilization of the wastewater discharged to the ponds, and to prevent the creation of anaerobic or nuisance conditions.

e. Treatment and Storage Ponds. Wastewater at any place about two feet from the water's edge of a treatment (TR) or storage (ST) pond shall not exceed the following limits in any grab sample:

| Measured parameter | Quality specifications |
|---|---|
| (i) Dissolved Oxygen | 2.0 mg/L, minimum |
| (ii) Dissolved Sulfides* | 0.1 mg/L, minimum |

(iii) pH 6.5 minimum

*sampled only when dissolved oxygen concentration is below 2 mg/L

**3. Spray Discharge**

a. Operating Conditions. Discharges of wastewater to the designated discharge area shall not occur under any of the following conditions:

a) Rainfall
b) Presence of ponded standing water
c) Saturated soils, or
d) Increased potential of ponding or runoff.

b. Sprinklers. All sprinklers used in spray discharge shall be of the low trajectory type in order to minimize the potential for transmission of airborne spray beyond the perimeter of the spray field. Spray discharge shall be discontinued whenever wind velocity at the spray field exceeds 10 miles per hour.

c. Anemometer. An anemometer shall be installed at or near the spray discharge area for the purpose of detecting high wind speeds. The anemometer shall be connected to one of the following control systems:

(i) A control switch that will automatically shut of the irrigation pumps whenever wind speeds exceed a preset level or
(ii) An audible and visual alarm sufficient to notify operating personnel (at any time, day or night, 365 days per year) of wind speeds in excess of a preset level and/or the need to cease spray discharge operations.

**4. Authorized Wastewater Flows**

a. **Wastewater System**. Collection of wastewater from the Tomales area into the Facility shall not exceed an average dry weather flow of 43,000 gallons per day or a peak wet weather flow of 240,000 gallons per day.

**5. Final Effluent Quality**. Treated wastewater used for irrigation of the pasture shall meet the following quality limits at all times, in any grab sample:

| Measured parameter | Quality specifications |
|---|---|
| (i) Dissolved oxygen | 2.0 mg/L, minimum |
| (ii) pH | 6.5 minimum |
| (iii) Chemical oxygen demand | 210 mg/L, maximum |
| (iv) Total coliforms | 240 MPN*/100 ml – max. median from last 5 samples |

*most probable number

**6. Discharge Discontinuation.** Discharges of effluent to the discharge area are prohibited during any period when the limits specified in B.5 (Final effluent quality) above are not being met. The discharges shall not resume until all conditions which caused the specified limits to be violated have been corrected.

**7. Wastewater System Operation and Maintenance.**

a. 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 discharge specification requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order.

b. The wastewater system shall be operated and maintained in accordance with the procedures identified in the Operations and Maintenance (O&M) Manual required by this Order (Provision 11.b).

**8. Pump Stations.**

a. All pump stations shall be designed, constructed, operated, and maintained to prevent the occurrence of a sewage spill or spills resulting from mechanical breakdown or power failure.

b. All pump stations shall be equipped with reserve hydraulic capacity sufficient to provide storage of wastewater during a pump failure condition for at least 24 hours, and water level monitoring and alarm system(s) to provide notification of high water level conditions. The alarm system shall include audible and visual alarms sufficient to notify operating personnel of an alarm condition. If operating personnel are not present at the Facility, the alarm system shall include an automated telephone dialer or other telecommunication system capable of notifying on-call operating personnel of the alarm condition.

c. The power supply for alarm systems shall be independent of the normal power supply for the wastewater system.

**9. Pipe Separations.**

a. There shall be no cross-connection between potable domestic water supply pipes and pipes containing treated wastewater.

b. There shall be at least a 10-foot horizontal and a one-foot vertical separation between all pipes transporting wastewater and pipes transporting potable domestic water, with the potable domestic water pipes above the wastewater pipes.

**10. Discharge Area Separation from Wells.** The discharge area shall be designed, constructed, and maintained such that a horizontal separation distance of at least 100 feet is maintained between any future domestic water supply wells and the nearest point of the discharge area.

**11. Wastewater Solids.** All solid materials removed from any stage of the liquid waste stream of the wastewater system shall be disposed of at a legal point of disposal, and in accordance with the provisions of Title 27 of the California Code of Regulations. This includes solids accumulated in septic tanks, grease traps or pump tanks. For the purpose of this requirement, a legal point of disposal is defined as a facility for which waste discharge requirements have been prescribed or waived by a Regional Water Board and which facility is in full compliance therewith. This Order does not authorize disposal of wastewater solids anywhere on the Facility.

## C. PROVISIONS

**1. Order Compliance.** The Discharger shall comply immediately 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 waste discharge requirements. Violations may result in enforcement actions, including Water 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 Water Board (California Water Code (CWC) sections 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, and 13350).

2. **Self-Monitoring Program.** The Discharger shall comply with the Self-Monitoring Program (Attachment E) for this Order as adopted by the Board and as may be amended by the Executive Officer.

3. **Order Availability.** A copy of these waste discharge requirements shall be maintained by the Discharger and shall be made available by the Discharger to all employees or contractors performing work (maintenance, monitoring, repair, construction, etc.) at the Facility.

4. **Vested Rights.** 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 liability under Federal, State, or local laws, nor do they create a vested right for the Discharger to continue the waste discharge.

5. **Severability**. Provisions of these waste discharge requirements are severable. If any provisions of these requirements are found invalid, the remaining requirements shall not be affected.

6. **Requirements for Technical Reports**. All technical and monitoring reports required by this Order are required pursuant to CWC section 13267. 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 actions pursuant to CWC section 13268.

7. **Electronic Reporting Format.** In addition to print submittals, all reports submitted pursuant to this Order shall be submitted as electronic files in PDF format. All electronic files shall be submitted via the Water Board's file transfer protocol (FTP) site or the centralized email address: WDR.monitoring@waterboards.ca.gov. Email notification shall be provided to Water Board staff whenever a file is uploaded to the Water Board's FTP site.

8. **As-Built Plans - Current System.** The Discharger shall submit to the Board a technical report, acceptable to the Executive Officer, no later than 30 calendar days from the date of adoption of this Order, comprised of as-built plan drawings, and narrative descriptions as appropriate, of the completed-to-date wastewater treatment and discharge system.

   **Water Balance Equation.** The as-built plans shall include a water balance equation for the discharge system including the two storage ponds and the discharge area. The water balance equation shall demonstrate adequate capacity for the wastewater treatment and discharge system to treat and discharge according to seasonal weather patterns in the vicinity of the Facility and the authorized wastewater inflow volume discharge specifications in this Order.

   **Tank Specifications.** For all tanks, the as-built plans shall include complete tank specifications (e.g., location, material, total and operating capacities, dimensions, date of installation, number of compartments, access openings, risers and riser lids), and results of watertight verification tests. All plan drawings shall be of a scale of at least one inch equals 40 feet, properly labeled, and clearly legible.

9. **As-Built Plans - Future Changes.** In the event of any changes to wastewater system components in the future, updated as-built plans of the portion of the system affected by such changes shall be submitted to the Board within 30 days of completion of those changes. Depending upon the types and extent of changes, an amendment to this Order may be necessary.

10. **Operation and Maintenance Providers.**

a. The wastewater system shall be operated and maintained by persons that are experienced in and knowledgeable of proper wastewater treatment and discharge practices. Such persons shall be wastewater treatment plant operators possessing a current and valid certification from the State of California.

b. If the Discharger does not have this expertise within its own staff, the Discharger may fulfill this requirement by contracting with a certified wastewater treatment plant operator for operation and maintenance of the wastewater system.

c. The Discharger shall submit to the Board, within ten days of adoption of this Order, copies of signed service contracts with operators for operation and maintenance of the wastewater system.

d. In the event of any changes in contracted service providers, the Discharger shall notify the Board in writing of such changes prior to the effective date of such changes, and submit copies of the new or revised contracts within ten working days from the effective date of those changes.

**11. Operation and Maintenance Program.** The Discharger shall develop and implement an Operations and Maintenance (O&M) Program for the wastewater system, in accordance with the following:

a. **O&M Program.** The O&M Program shall include all procedures necessary to properly operate the wastewater system in accordance with design parameters, to achieve compliance with waste discharge requirements, and to maintain the system in good working condition.

b. **O&M Manual**. The O&M Program shall include an O&M Manual documenting all aspects of the program and it shall be readily accessible at all times for the system operators. The O&M Manual shall include, but not be limited to, the following:

1) Description of the overall wastewater system;
2) Scaled plan drawings of the wastewater system, including pipes, valves and control equipment;
3) Description of the wastewater flow through the system, from sources to final discharge;
4) Descriptions and specifications of all system components and equipment;
5) Routine procedures for operation of the wastewater system;
6) Routine procedures for management and disposal of wastewater solids removed from the wastewater streams;
7) Procedures for maintenance of all system components;
8) Procedures for operation of the wastewater system during emergency conditions such as power outage, major equipment failure, extreme wet weather conditions, or other emergencies; and
9) Copies of all applicable regulatory permits for the wastewater system, or specific references of those permits and identification of a location at the Facility where those permits are available for review and reference by operating personnel, other service providers, or regulatory agency staff.

c. **O&M Manual Submittal.** The Discharger shall submit to the Board a technical report, acceptable to the Executive Officer, no later than 30 calendar days from the date of adoption of this Order, comprised of a complete copy of the O&M Manual, identification of person(s) responsible for implementation of the O&M Program, and contact information for those persons.

d. **O&M Manual Review and Updates.** The Discharger shall periodically review and update, as necessary, the O&M Manual in order to ensure that the manual remains current and applicable to the wastewater system and its proper operation.

e. **O&M Manual Annual Reports.** Annually, the Discharger shall submit a report to the Board containing any revisions or updates of the O&M Manual that have been made, or a letter stating that the O&M Manual remains adequate and no revisions are necessary. This report shall be submitted as part of the Annual Monitoring Report.

12. **Non-Compliance Reporting**. In the event the Discharger is unable to comply with any of the conditions of this Order, the Discharger shall notify the Board by telephone as soon as the Discharger or the Discharger's agents have knowledge of the incident. Written confirmation of this notification shall be submitted within five working days of the telephone notification. The written notification shall include the following information:

    a) A description of the noncompliance and its cause;
    b) The period of noncompliance;
    c) Actions that were taken in response to the incident;
    d) And the steps taken or planned to prevent recurrence of the noncompliance.

13. **Endangerment of Human Health or the Environment**. The Discharger shall report any noncompliance that may endanger human health or the environment. Any such information shall be provided orally to the Executive Officer, or an authorized representative, and the California Department of Public Health (CDPH), Environmental Management Branch, PreHarvest Shellfish Unit, within 24 hours from the time the Discharger becomes aware of the circumstances. In addition, the Discharger shall notify the property owners of the adjacent residential properties and commercial facilities by telephone as soon as the Discharger or Discharger's agents have knowledge of the incident. A written submission to the Water Board and CDPH shall be provided within five days of the time the Discharger becomes aware of the circumstances. The written submission shall contain the following:

    e) A description of the noncompliance and its cause;
    f) The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected;
    g) Actions that were taken in response to the incident;
    h) The anticipated time it is expected to continue;
    i) And the 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.

14. **Entry, Access, and Inspection.** The Discharger shall permit the Board or its authorized representatives, in accordance with CWC section 13267(c):

    a) Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
    b) Access to and copy of, at reasonable times, any records required by conditions of this Order;
    c) Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; or
    d) Photography, sampling, or monitoring, at reasonable times, for the purpose of assuring compliance with this Order.

**Notification for Modifications to the Order**

15. **Change in Control or Ownership.** In the event of any change in control or ownership of land or wastewater systems 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 forwarded to this Board. The succeeding owner or operator, in order to obtain authorization for discharges regulated by this Order, must apply in writing to the Water Board, requesting transfer of the Order. This request shall include complete identification of the new owner or operator, the reasons for the change, and the effective date of the change. Discharges conducted without submittal of this request will be considered discharges without waste discharge requirements, and thus violations of the California Water Code.

16. **Report of Waste Discharge for Change in Discharge Characteristics, Facility.** The Discharger shall file with the Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the discharges or discharge facilities, or any changes to the wastewater system equipment as described in this Order, except for emergency conditions. In the event of implementing changes in response to emergency conditions, the Board shall be notified immediately by telephone, and in writing within five calendar days of such changes.

17. **Order Review and Update.** The Board will review this Order periodically and may revise the requirements as necessary to comply with changing State and Federal laws, regulations, policies, or guidelines; changes in this Board's Basin Plan; or changes in the discharge characteristics.

18. **Order Termination.** After notice and public meeting, this Order may be terminated or modified by the Board for any reason.

19. **Rescission of Previous Order.** The waste discharge requirements prescribed by this Order supersede those prescribed by this Board's Order No. 86-086 for North Marin County Water District. Order No. 86-086 is hereby rescinded for North Marin County Water District.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on [DATE].

_____

BRUCE H. WOLFE
Executive Officer

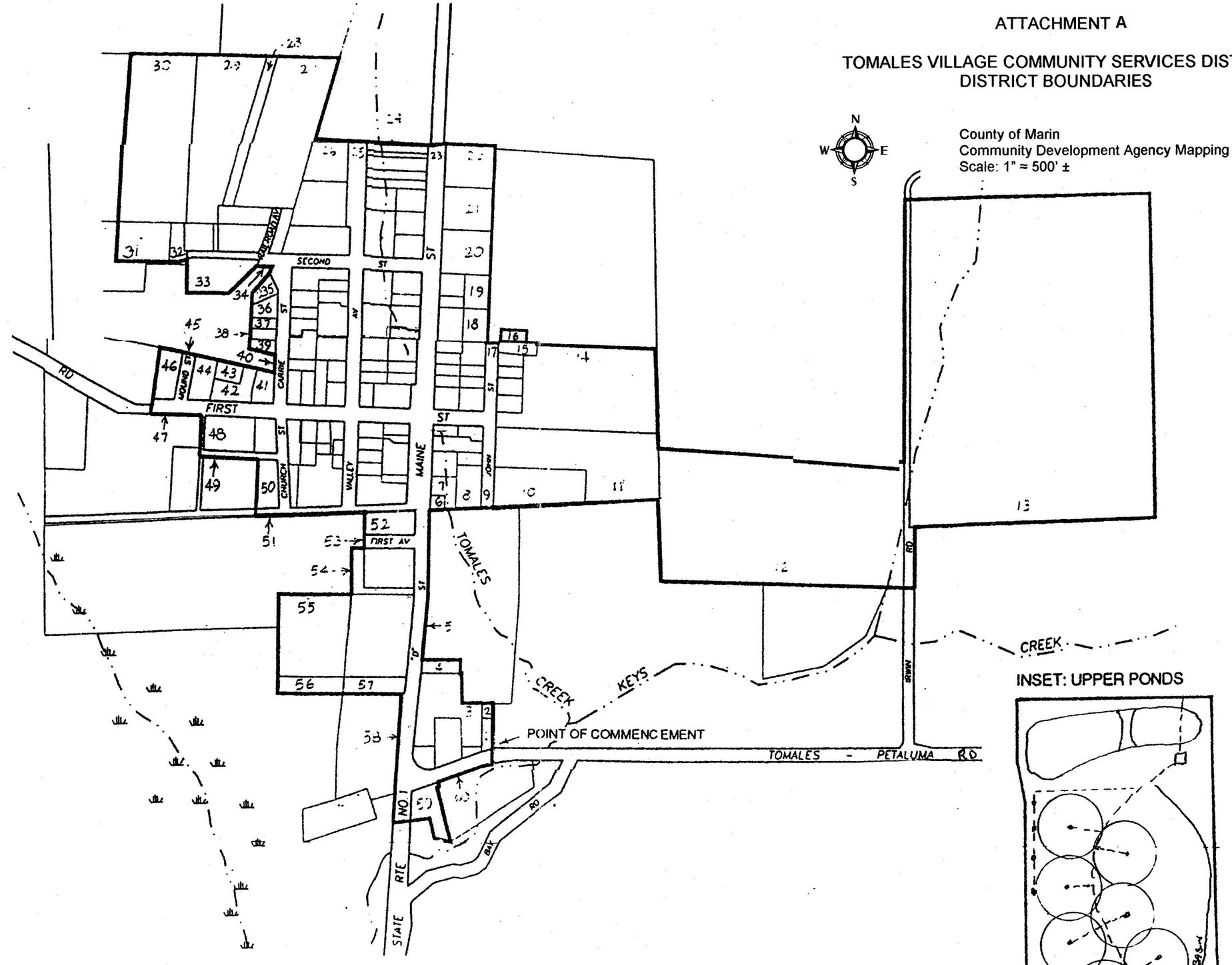
Attachments:

A. Facility Plan
B. Wastewater Treatment and Discharge System Flow Schematic
C. Collection System Map
D. Three-stage Treatment Pond System Configuration and Specifications Schematic
E. Self-Monitoring Program

ATTACHMENT A

TOMALES VILLAGE COMMUNITY SERVICES DISTRICT
DISTRICT BOUNDARIES

County of Marin
Community Development Agency Mapping
Scale: 1" ≈ 500' ±



ATTACHMENT B

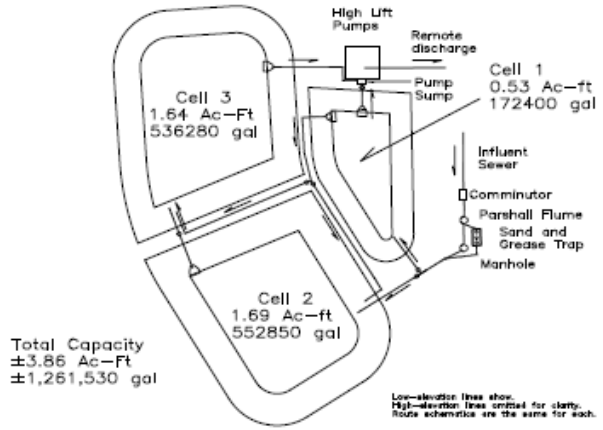
**Process flow diagram.**

2.6-mile Collection System

Comminutor

Fats, Oils, and Grease Interceptor (Three-chamber 2000-gallon Selvage tank)

Three-stage Treatment Pond System (Attachment D)




Storage Ponds (Total Capacity 10.1 MG)

West

East

Disinfection

Discharge Area

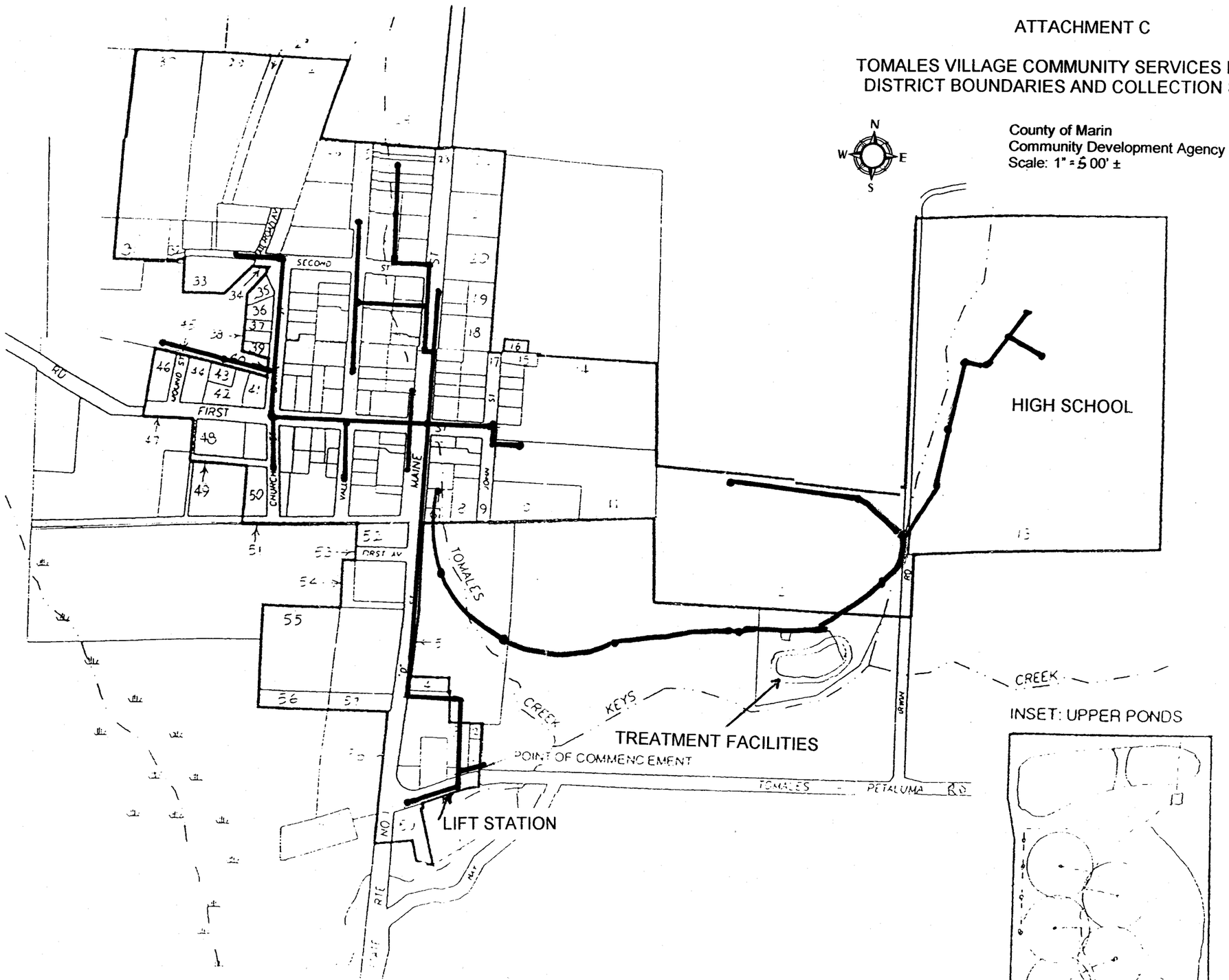
Irrigation Pasture (**21-acre**)

Discharge to Irrigation Pasture (Discharge Area):
Order 86-086 (rescinded): NOT during wet weather: Nov 15-Apr 15
Order R2-2015-00XX: Conditional discharge per Order; wastewater is disinfected in the effluent line to irrigation field

ATTACHMENT C

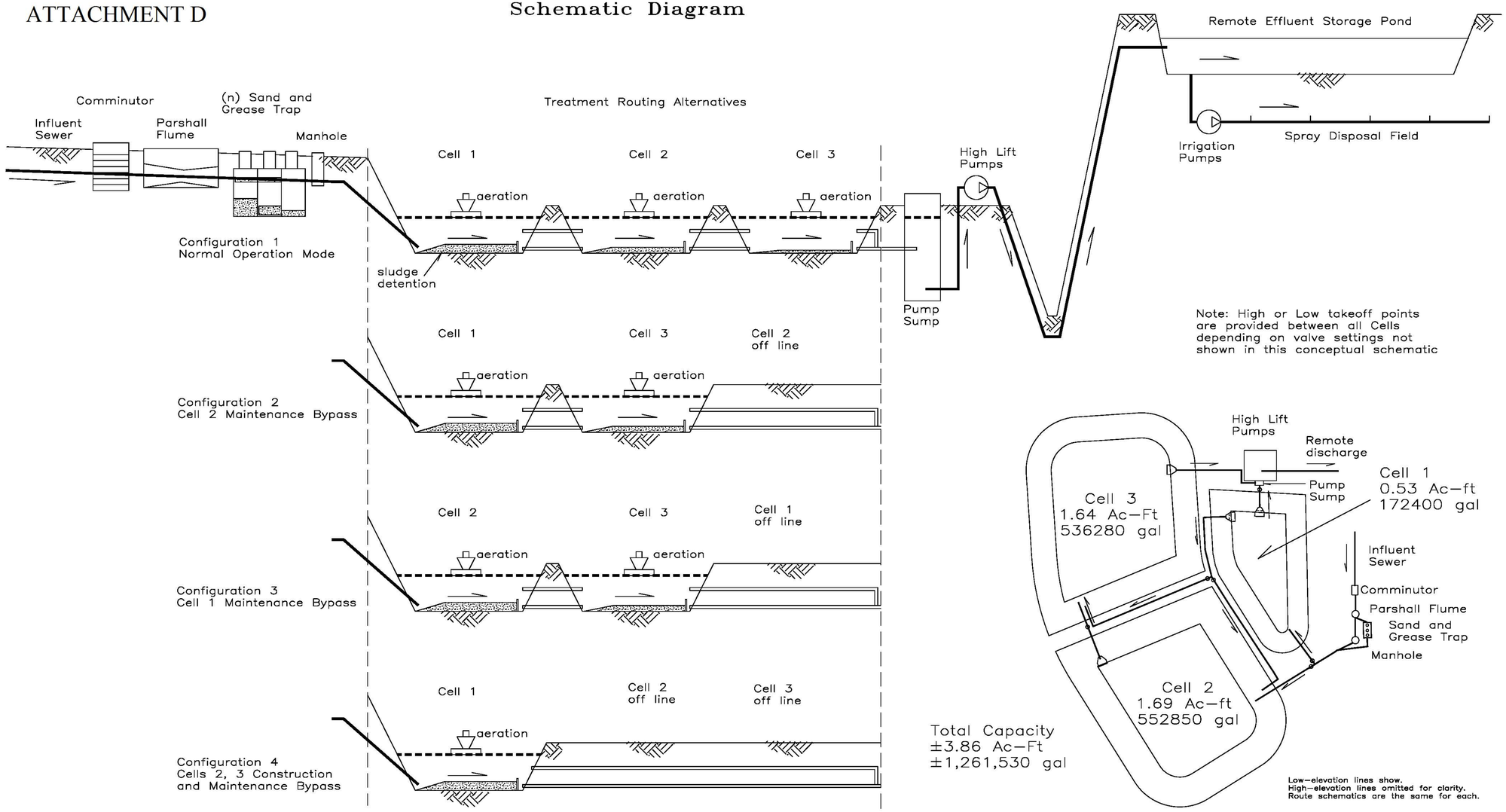
TOMALES VILLAGE COMMUNITY SERVICES DISTRICT
DISTRICT BOUNDARIES AND COLLECTION SYSTEM

County of Marin
Community Development Agency Mapping
Scale: 1" = 500' ±



ATTACHMENT D

# Schematic Diagram

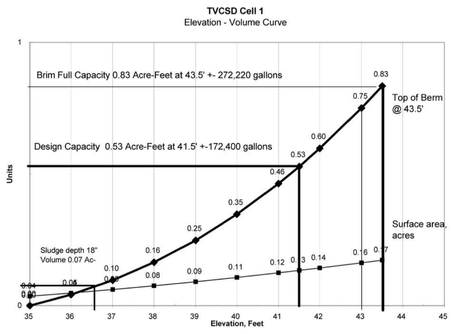


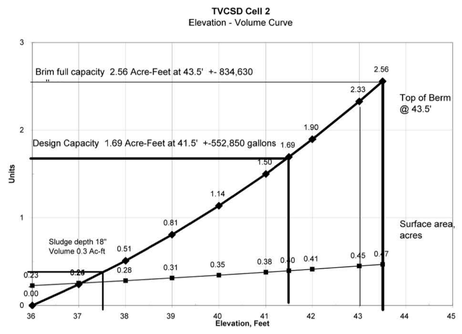

Note: High or Low takeoff points are provided between all Cells depending on valve settings not shown in this conceptual schematic

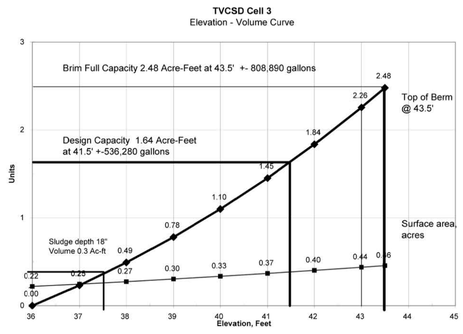


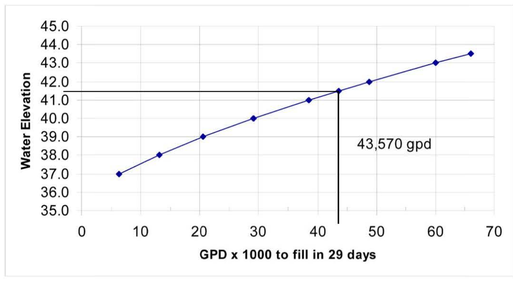

Total Capacity
±3.86 Ac–Ft
±1,261,530 gal

Low–elevation lines show.
High–elevation lines omitted for clarity.
Route schematics are the same for each.




REGISTERED PROFESSIONAL ENGINEER
Lee B Erickson
AE 468
CE 45660
Expires 12/31/2014
Agricultural
Civil
STATE OF CALIFORNIA

REVISIONS
Mar. 28, 2014
2' freeboard volumes, calibration curves


Erickson Engineering Inc.
Valley Ford CA 94972-0446
707/795-2498 Voice/Fax


WASTEWATER TREATEMENT POND
REVISIONS - SCHEMATIC FLOW DIAGRAM

Lands of:
TOMALES VILLAGE
COMMUNITY SERVICES DISTRICT
APN 102-130-10
Irwin Lane, Tomales CA 94971

40328 C2.dwg

Date:
June 6, 2006

Scale:
none

Sheet
C2

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

# TENTATIVE
# SELF-MONITORING PROGRAM
# (Attachment E)

**for the**

# TOMALES VILLAGE COMMUNITY SERVICES DISTRICT
# WASTEWATER TREATMENT FACILITY
# at
# 10 IRVIN ROAD, TOMALES, MARIN COUNTY

**for**

**ORDER NO. R2-2014-XXXX**

CONTENTS:

## I. PURPOSE

1. This monitoring program is for waste discharge requirements assigned to the Tomales Village Community Services District (Discharger), adopted by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board).

2. The principal purposes of a monitoring program by a waste discharger, also referred to as a self-monitoring program (SMP), are
   a. To document compliance with waste discharge requirements and prohibitions established by the Water Board and
   b. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution or potential threats to water quality arising from waste discharges.

3. Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code, and Water Board Resolution No. 73-16.

## II. SAMPLING and ANALYTICAL METHODS

1. **Approved methods**. Sample collection, storage, and analyses shall be performed according to Code of Federal Regulations Title 40, Section 136 (40 CFR 136), or other methods approved and specified by the Executive Officer of the Water Board (Executive Officer).

2. **Approved laboratory**. Water and waste analyses shall be performed by a laboratory approved for these analyses by the California Department of Public Health (CDPH), or by a laboratory waived by the Executive Officer from obtaining a CDPH certification for these analyses, or as otherwise specified in this SMP.

3. **Accountability for analytical work**. The director of the laboratory whose name appears on the certification, or his laboratory supervisor who is directly responsible for the analytical work performed, shall supervise all analytical work including appropriate quality assurance/quality control procedures in his laboratory and shall sign all reports of such work submitted to the Water Board.

4. **Appropriate usage and calibration of equipment**. Measurements by use of portable analytical equipment or other monitoring instruments and equipment shall abide by the following conditions:
   a. The analytical equipment is appropriate for the given analysis of/for water or waste;
   b. The analytical equipment is properly maintained and calibrated to ensure accuracy;
   c. The equipment user is knowledgeable of proper sampling and equipment use practices; and
   d. Written notification of the intended use has been provided in advance to the Water Board, and the Water Board has not stated any objections.

## III. DEFINITION of TERMS

The following are definitions and explanations of terms used in this monitoring program; see Appendix A for abbreviation expansions. Additional descriptions are given in the findings of this Order.

### A. FACILITY AND WASTEWATER SYSTEM

1. **Facility Site.** The facility site is the land on which the facility identified as the Tomales Wastewater Facility is located. This land consists of Marin County Assessor's Parcel Number 102-130-10 and 104-050-18.

2. **Wastewater System.** The wastewater system is comprised of all equipment at the facility site used for collection, conveyance, treatment, storage, discharge, and management of wastewater and wastewater solids from the community of Tomales, including the Shoreline Unified School District.

3. **Discharge Area.** The discharge area, also called the irrigation field, is a 21-acre vegetated gently sloping hillside field, fenced and gated, with above-grade sprinklers, located downhill of the storage ponds, and about 3,600 feet south of the wastewater treatment ponds.

4. **Discharge System.** The discharge system is the portion of the wastewater system used for conveyance and discharge of treated wastewater to land in the identified discharge area. This includes, but is not limited to, pumps, pipes, sprinklers, and all equipment used to control and monitor the discharge operations.

## B. TYPES OF SAMPLES

1. **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. Use of a properly calibrated and maintained automated pump-use recording device, such as a pump dose event counter, is acceptable.

2. **Grab Sample.** A grab sample is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples are used primarily in determining compliance with daily or instantaneous maximum or minimum limits, and also for bacteriological limits. Grab samples represent only the condition that exists at the time and location the sample is collected.

3. **Observations.** Observations are primarily visual assessments and inspection of conditions. Observations may include recording measurements from monitoring devices such as freeboard determined from a water level staff gauge, or precipitation determined from a rain gauge.

4. **Pond Water Depth.** Pond water depth is the vertical distance between the free water surface of the water contained in the pond, and the bottom of the water volume contained in the pond.

5. **Pond Freeboard.** Pond freeboard is the vertical distance between the free water surface of the water contained in the pond, and the elevation of the lowest point of the top of the water containment structure (i.e., the elevation at which water would overflow from the pond).

## C. SAMPLING FREQUENCY

1. **Continuous.** Continuous monitoring.
2. **Daily.** One time each calendar day.
3. **Weekly.** One time per calendar week, with sampling interval 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. **Semiannual.** Two times per calendar year, with sampling intervals of about six months.
7. **Annual.** One time per calendar year.
8. **Event.** Each service or discharge event.
9. **Conditional.** Depending on conditions specified in this SMP:
   For Dissolved Sulfides, the condition is whenever Dissolved Oxygen < 2.0 mg/L.

## D. MONITORING PERIODS

For purposes of monitoring, reporting and compliance determinations relevant to requirements specified in this Order and SMP, the following time periods apply:

1. **Daily.** 24-hour period associated with a calendar day; may overlap calendar days (e.g., 8 am of one day to 8 am of the next), but shall be consistent from one sampling event to the next.
2. **Weekly.** 7-day calendar week.
3. **Monthly.** Each respective calendar month.

4. **Annual.** Calendar year.

## IV. DESCRIPTION of MONITORING STATIONS

### A. GENERAL

1. **Monitoring Station Definitions**. Stations to be used for sampling and observations in this SMP (self-monitoring program) are described in this section (IV). Each station is identified by a station code and station description. The Station Code is a reference code for station identification in this SMP and in recording and reporting of monitoring data. The Station Description is a description of the water, wastewater, point of the wastewater system, or land area where specified monitoring is to be conducted.

2. **Monitoring Station Changes.** Changes to the monitoring stations defined in this SMP may be authorized by the Executive Officer, in order to accommodate changes in the wastewater system or wastewater system operations or to provide improved monitoring. Requests for changes to the monitoring stations shall be submitted to the Water Board in writing with a detailed explanation of the purpose of the proposed station changes. Proposed changes to monitoring stations shall be approved in writing from the Executive Officer prior to implementation.

3. **Site Plan Showing All Monitoring Stations.** The Discharger shall develop a scaled and legible plan view drawing of the facility site that clearly shows the locations of all major components of the wastewater system, all monitoring stations identified in this SMP, and relevant land use features such as buildings, access roads, property boundaries and surface water drainage systems. A copy of this drawing shall be included with each annual monitoring report, and with any reports regarding station changes.

## B. WASTEWATER SYSTEM MONITORING STATIONS

| | Code | Station Name and Description | Station Purpose |
|---|---|---|---|
| 1. | INF | Influent: Wastewater at a point in the Wastewater Treatment Facility (Facility) where all wastes upstream of the treatment process are present. | Measurement of the total volume of wastewater flow into the Facility. To document compliance with the Authorized Wastewater Flow (annual total flow) limit given in Discharge Specification 4 of this Order. |
| 2. | FOG | Fats, Oils, and Grease Interceptor: Wastewater at a point in the Facility after collection into the comminutor, before the fats, oils, and grease (FOG) interceptor. | Sampling and analytical characterization of influent into the wastewater treatment plant through the FOG interceptor. |
| 3. | TR-1, TR-2, TR-3 | Treatment Ponds, 1, 2 and 3: Wastewater at a point in each of the three respective treatment ponds, representative of the water in the pond; a physical location suitable for general observations of pond conditions. | Sampling and analytical characterization of pond water for Dissolved Oxygen, pH, Temperature, and Dissolved Sulfides as needed; for standard observations of pond conditions, to document compliance with the requirements of Discharge Specification 2 of this Order. |
| 4. | EFF- TR | Treatment Pond Effluent: Wastewater at a point in the Facility where all treatment has been completed, except for disinfection by chlorination, prior to discharge to the irrigation field. | Sampling and analytical characterization of final treated effluent prior to discharge to land, to monitor and evaluate treatment system performance and to document compliance with requirements of Discharge Specification 5 of this Order. |
| 5. | ST-East, ST-West | Storage Ponds, East and West: Wastewater at a point in each of the two respective storage ponds, representative of the water in the pond. And a physical location at each pond suitable for general observations of pond conditions. | Sampling and analytical characterization of pond water for Dissolved Oxygen, pH, and Dissolved Sulfides as needed, and for standard observations of pond conditions, to document compliance with requirements of Discharge Specification 2 of this Order. |
| 6. | EFF-D | Disinfected Effluent: Wastewater at a point in the Facility where all treatment has been completed, including disinfection by chlorination, suitable for bacteriological quality analyses. | Sampling and analytical characterization of the bacteriological quality of the final treated effluent, to document compliance with Total Coliform limits given in Discharge Specification 5.iv. |
| 7. | EFF-Flow | Effluent Flow: Wastewater at a point in the Facility where all treatment has been completed, including disinfection by chlorination, suitable for final effluent flow measurement. | Measurement of the total flow of final treated disinfected wastewater effluent discharged to land at the irrigation field. |
| 8. | FIELD | Irrigation Field: The irrigation field land area used for discharges of treated wastewater to land. | Standard observations of discharge area conditions and to document compliance with requirements of Discharge Specification 3 of this Order. |

## V. MONITORING SCHEDULE and SPECIFICATIONS

### A. MONITORING SCHEDULE

1. **Table 1.** The Discharger is required to perform sampling, analyses, and observations according to the schedule tabulated in **Table 1 - Schedule for Monitoring**, which is the last item in this SMP.

2. **Table 1 "SMP References".** Table 1 includes references given in brackets to the right of the Parameter name. These references correspond to Definitions in Section III or Monitoring Specifications in Section V.B. of this SMP.

### B. MONITORING SPECIFICATIONS

1. **Flow Monitoring and Reporting.** All flows shall be monitored continuously in a manner sufficient to measure, record, and report the daily flow volume for each day of operation, and the monthly flow volume for each calendar month. Flows shall be reported as Daily Flow, in gallons, for each day when flow occurs, and Monthly Flow, in gallons, for each calendar month.

2. **Additional Monitoring May be Necessary.** The monitoring requirements established in this SMP are minimum requirements. Additional monitoring for any parameter may be necessary and prudent to ensure proper wastewater system performance and compliance with WDRs.

3. **Nitrogens.**
   - **a.** The parameter 'Nitrogens' in this SMP means all of the following parameters:
     (1) Ammonia Nitrogen,
     (2) Nitrate Nitrogen,
     (3) Total Kjeldahl Nitrogen (TKN), and
     (4) Total Nitrogen.
   - **b.** Analytical results for the above nitrogen parameters shall be reported as: mg/L as Nitrogen.

4. **Precipitation.** Precipitation (rainfall) monitoring shall be continuous. It shall be recorded and reported as total rainfall for each calendar day and as the total for each calendar month. Precipitation monitoring shall be representative of precipitation falling on the discharge areas.

5. **Standard Observations.**
   a. Check (smell) area for odors.
   b. Check area for evidence of any standing water (ponded water).
   c. Check for evidence of mosquitoes breeding within the area due to standing water.
   d. Check all visible distribution system components for proper condition and hydraulic integrity.
   e. Check discharge area runoff containment systems (berms and/or subsurface drains) for proper condition and integrity. Note and record any evidence of wastewater escaping the discharge area.
   f. Check perimeter fences and gates for properly posted warning signs to inform public that discharge area water is wastewater which is not safe for drinking.
   h. Measure and record pond water depth and pond freeboard, in feet and inches.

### C. INCREASED MONITORING FREQUENCY

If any monitoring indicates unstable wastewater system operation or performance, or a violation of waste discharge or monitoring requirements including incomplete sampling or analyses, then monitoring for the parameter(s) and station(s) in concern shall henceforth be conducted at twice the ordinary frequency identified in Table 1 of this SMP. This increased monitoring frequency shall be maintained for at least two sampling events, and until such time as the results of monitoring indicate violations are no longer occurring or the problem has been corrected and the wastewater system has returned to stable operation and performance.

**D. MONITORING BY USE OF AUTOMATED INSTRUMENTS**

Selected parameters may be monitored by the use of automated analytical instruments, provided such instruments are properly maintained and calibrated to ensure accurate measurements, and that these instruments and their use is documented in the Operation and Maintenance Program Manual, and written acceptance by the Executive Officer has been provided.

**E. MODIFICATION OF MONITORING PRACTICES**

Modifications of the monitoring practices specified in this SMP may be authorized by the Executive Officer, in consideration of acceptable accumulated data and acceptable alternate means of monitoring. 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. Requests for modification of monitoring practices must be submitted to the Water Board in writing, with a technical report that includes evaluation of accumulated data, and a complete description of proposed alternate means of monitoring. Proposed modifications of monitoring practices must be accepted in writing by the Executive Officer, prior to implementation.

## VI. REPORTS to be SUBMITTED to the WATER BOARD

**A. MONITORING REPORTS**

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

**1. Report Schedule.**

**a. Monthly Reports.** Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Reports shall be prepared for each calendar month and shall be submitted to the Water Board by the **last day of the month following the monitoring period** (e.g. the February report is due by March 31).

**b. Annual Reports.** Written reports shall be prepared for each year and shall be submitted to the Water Board by the last day of the second month following the monitoring period (i.e., February 28 or 29).

**2. Transmittal Letter.**

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

**a. Identification.** Identification of the following:
(1) The discharge facility by name and address;
(2) The monitoring period being reported;
(3) The name and telephone number of a person familiar with the report and the current status of the wastewater system, for follow-up discussions as may be needed; and
(4) The name of the Water Board staff case handler.

**b. Operation and Maintenance Activities.** Discussion of all significant wastewater system operation and maintenance activities that occurred during the reporting period (e.g., repair or replacement of system equipment), including dates and reasons for such activities.

**c. Violations or Problems.** Discussion of any violations of waste discharge requirements, and any problems or unusual conditions, that occurred during the reporting period. This shall include reporting of the following information:
(1) Date and time of occurrence;
(2) Location of occurrence, shown on a scaled plan drawing of the facility site;

(3) Description of the violation, problem, or unusual condition;
(4) Corrective actions taken or planned to correct the violation, problem, or unusual condition and a time schedule for implementation of these actions. Actions may include increased monitoring and any changes to wastewater system equipment or operations.

If a report describing corrective actions and/or a time schedule for implementation of those actions was previously submitted to the Water Board, then reference to that report is satisfactory. References to other reports shall include the Date, Title or subject, and Author of the referenced report.

**d. Transmittal Letter Signature(s).** The transmittal letter shall be signed by: (1) the Discharger's principal executive officer, ranking elected official, or duly authorized representative, and (2) the wastewater system chief plant operator, with the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, 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.**
Each report shall include results of analyses and observations in accordance with the following:

**a. Monitoring Results.** Each monitoring report shall include tabulations of results from all required analyses, measurements, and observations specified in this SMP for the reporting period, including:
(1) Date of sampling or observation;
(2) Location of sampling or observation (sample station);
(3) Parameter of analysis (e.g., pH, Dissolved Oxygen, etc.); and
(4) 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 a manner to illustrate clearly whether the discharge is in compliance with waste discharge requirements and this SMP. Reporting shall include maximum, minimum and monthly average values for each parameter for which more than one sample result is obtained during the monitoring period.

**c. Sample Analysis Data.** For all sample analyses, include the following:
(1) Date of analysis;
(2) Individual or contract laboratory conducting the analysis;
(3) Analytical procedure or method used, and test method detection level; and
(4) Copies of laboratory analysis result reports for all analyses conducted by a contract laboratory.

**d. 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.

**e. Additional Monitoring Results.** If any parameter is monitored more frequently than is required by this SMP, then the results of such monitoring shall be included in the monitoring reports, and in any calculations of statistical values.

4. **Monitoring During Wastewater System Modifications.** Whenever any modifications to the wastewater system occur, the monitoring report shall include a description of work that has occurred during the monitoring period, any impacts to the wastewater system operations and, if work is incomplete, anticipated completion schedule.

5. **Annual Monitoring Reports.**
   The annual monitoring report shall include the following:
   - **a.** Data. Tabular and graphical summaries of monitoring data obtained during the period being reported.
   - **b.** Long-term BOD:COD correlation report. Report results from concurrently measuring both chemical oxygen demand (COD) and biological oxygen demand (BOD), in order to demonstrate a long-term BOD:COD correlation for approved documentation and validation of COD testing as an acceptable form of wastewater strength reporting for the Facility (as described in federal effluent guidelines, 40 CFR 133.104b).
   - **c.** Water Balance. A tabulation of monthly wastewater flows into and out of the wastewater Facility, including monthly total flows for monitoring stations within the Facility where flows are recorded.
   - **d.** Performance record. A discussion of wastewater system performance and compliance with requirements specified by this Order.
   - **e.** Monitoring record. A discussion of any data gaps or deficiencies in the monitoring record.
   - **f.** Non-compliance events. For any event of non-compliance with requirements specified by this Order, including monitoring and reporting requirements, the report shall include description of corrective actions taken or planned to achieve full compliance, and a time schedule of when those actions were or will be taken.
   - **g.** Monitoring Station Map. A scaled and legible plan view drawing of the facility site which shows the locations of all monitoring stations specified by this SMP.

## B. REPORTS of VIOLATIONS

If the Discharger violates or threatens to violate waste discharge requirements or this SMP due to

1. Maintenance work, power failure, or breakdown of wastewater system equipment;
2. Accidents caused by human error or negligence; or
3. Other causes such as acts of nature, then:

The Discharger or Discharger's agent(s) shall notify the Water Board office by telephone as soon as the Discharger or Discharger's agent(s) have knowledge of the incident. Written notification shall be submitted within two weeks of the date of the incident, unless directed otherwise by Water Board staff. The written notification shall include pertinent information explaining reasons for the non-compliance and 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. REGIONAL WATER BOARD ADDRESS and PHONE NUMBER

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

1. **Mail Address:** California Regional Water Quality Control Board, San Francisco Bay Region
   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 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 Water Board case staff.
Water Board staff email addresses use this format: <first name>.<last name>@waterboards.ca.gov.

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

## VII. REPORTS to be SUBMITTED to OTHER ENTITIES

**A. California Department of Public Health.**
For each monitoring report required to be submitted to the Board, a complete copy of the report shall be submitted at the same time that the report is submitted to the Board, to the California Department of Public Health, Preharvest Shellfish Unit, at its current mailing address, at the time of this Order:

California Department of Public Health
Preharvest Shellfish Unit
ATTN: Vanessa Zubkousky-White
850 Marina Bay Parkway, G165
Richmond, CA 94804

## VIII. MONITORING PROGRAM CERTIFICATION

I, Bruce H. Wolfe, Executive Officer, hereby certify that this Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Water 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: _____.

_____
BRUCE H. WOLFE
Executive Officer

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## TABLE 1 - SCHEDULE for MONITORING (*)

| **Monitoring Stations:** | | | INF | FOG | TR-1, 2, 3, ST-East, ST-West | EFF-TR | EFF-D | EFF-Flow | FIELD | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Influent | FOG Unit Influent | All Treatment and Storage Ponds | Treatment Pond Effluent | Disinfected Effluent | Effluent Flow to Land | Discharge Area | |
| **Sample Parameters** | | **Type of Sample:** | F | G, O | G, O | G, O | G | F | O | |
| **Parameter** | **(units)** | **[SMP Reference]** | | | | | | | | |
| Flow Volume | (gallons) | [V.B.1] | D&M | | | | | D&M | | |
| COD | (mg/L) | | | W | | W | | | | |
| $BOD_5$20°C | (mg/L) | | | W | | W | | | | |
| Temperature | (degrees F or C) | | | W | W | W | | | | |
| pH | (pH units) | | | W | W | W | | | | |
| Dissolved Oxygen | (mg/L) | | | W | W | W | | | | |
| Dissolved Sulfides | (mg/L) | (whenever D.O. < 2 mg/L) | | C | C | C | | | | |
| Nitrogens | (mg/L as N) | [V.B.3] | | | | M | | | | |
| Total Dissolved Solids | (mg/L) | | | W | | W | | | | |
| Total Coliform | (MPN/100 mL) | | | | | | W \| E | | | |
| Precipitation | (inches) | [V.B.4] | | | | | | | | |
| Standard Observations | | [V.B.5] | | W | W | W | | | W | |
| Water Depth and Freeboard | (feet & inches) | [III.B.4 and III.B.5] | | | W | | | | | |
| Chlorine Tank Level | (inches) | | | | | | W | | | |

* For explanation of abbreviations used in this table, see **Table 1 Abbreviation Expansions**, on the next page below.

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## Appendix A
## TABLE 1 ABBREVIATION EXPANSIONS

**1. Type of Sample Abbreviations.**

| | | |
|---|---|---|
| F | = | Flow measurement |
| G | = | Grab Sample |
| GL | = | Ground water level measurement |
| O | = | Observation |

**2. Parameter Abbreviations.**

| | | |
|---|---|---|
| COD | = | Chemical Oxygen Demand |
| $BOD_5$ 20°C | = | Biochemical Oxygen Demand, 5-day, at 20°C |
| Chlorine Level | = | Chlorine tank level. |

**3. Unit Abbreviations.**

| | | |
|---|---|---|
| F or C | = | Fahrenheit or Celsius |
| mg/L | = | milligrams per liter |
| MPN/100 ml | = | Most Probable Number, per 100 milliliters of water |
| N | = | Nitrogen |

**4. Sampling Frequency Abbreviations (see III.C for definitions).**

| | | | | | |
|---|---|---|---|---|---|
| D | = | Daily | A | = | Annual |
| W | = | Weekly | M | = | Monthly |

C = Conditional:
For Dissolved Sulfides, sample for Dissolved Sulfides if Dissolved Oxygen < 2.0 mg/L.

D&M = Continuous monitoring; record and report Daily & Monthly values

W | E = Weekly monitoring, during each week when discharges to land occur.