CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-0087

WASTE DISCHARGE REQUIREMENTS

FOR
CITY OF ORLAND
CLASS II SURFACE IMPOUNDMENTS AND
DOMESTIC WASTEWATER TREATMENT FACILITY
GLENN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 14 August 2008, the City of Orland submitted a Report of Waste Discharge (ROWD) for revision of Waste Discharge Requirements (WDR) to operate the City of Orland's Class II Surface Impoundments and Domestic Wastewater Treatment Facility. On 26 August 2008, the ROWD was deemed incomplete. An addendum to the ROWD was submitted on 2 December 2008, which provided additional information requested by Regional Water Board staff. The wastewater treatment facility was previously regulated under WDR Order No. 96-126.

2. The City of Orland (hereafter Discharger) operates a wastewater treatment facility that accepts two waste streams. One waste stream consists of domestic wastewater from the City of Orland and the second waste stream consists of industrial waste from two olive processors and a nut processor. Domestic wastewater is exempt from the requirements of Title 27, California Code of Regulations (Title 27); however, the industrial waste stream is subject to the requirements of Title 27.

3. The City of Orland Class II Surface Impoundments and Domestic Wastewater Treatment Facility is located approximately two miles southeast of the City of Orland, at an elevation of about 215 feet mean sea level (MSL), in Section 36, T22N, R3W, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.

FACILITY DESCRIPTION

4. The domestic wastewater treatment facility consists of four unlined evaporation ponds and a 44-acre irrigation field. The field is flood irrigated with wastewater following pond treatment an average of two times per week during the winter and every other week during the summer. The irrigation field has a capacity of 19.6 million gallons.

5. The four domestic wastewater ponds were constructed in 1958 to accommodate an average flow of 2.13 million gallons per day (MGD) and a peak flow of 6.08 MGD. The domestic wastewater flow currently averages 0.72 MGD, with a peak flow of 1.24 MGD.

6. During the summer months, irrigation water is introduced into the sewer line to help control odors by keeping an adequate volume of water in the unlined ponds.

7. The industrial brine ponds were designed in 1983 to receive an average of 4.2 million gallons per year from surrounding processing facilities. The industrial class II surface impoundments consist of two lined evaporation ponds covering a total of 5.3 acres and have a total volume of 8 million gallons. Each pond is designed to receive 2.5 million gallons of wastewater per year, allowing for one pond to be dewatered and inspected annually while the other remains in service. Industrial wastewater has been segregated from the City of Orland's domestic wastewater since 1 October 1985. In 2009, the facility received a total industrial wastewater volume of 3.7 million gallons.

8. The class II surface impoundments are constructed with a single 30 mil PVC liner in 1985 and covered with 12 inches of soil. In 1995, a leachate collection and recovery system (LCRS) was installed within the existing soil cover material. The soil was then covered with a sand layer and a new 40 mil minimum Hypalon® (chlorosulfonated polyethylene) liner was placed over the sand layer. The combination of two synthetic liners with an intervening LCRS is an engineered alternative to the prescriptive requirements in Title 27.

9. Land use within 1,000 feet of the facility includes residential development, agriculture, and an airport (Orland Haigh Field Airport).

10. The Cleveland Hill Fault in the Foothills Fault System is the closest historic fault (< 150 years since last movement), located approximately 50 miles southeast of Orland. The closest late quaternary fault (<130,000 years since last movement) is the Stoney Creek Fault, located approximately 30 miles southwest of Orland. The closest quaternary (<1,600,000 years since last movement) fault is the Corning fault, located less than 1 mile from Orland. Peak ground motion acceleration is estimated at approximately 0.2 g.

11. The first water bearing formation is identified 15 to 20 feet below ground surface (bgs). The hydraulic gradient is estimated to the southeast.

12. The facility receives an average of 20 inches of precipitation per year as measured at the Orland Station operated by the National Weather Service.

The mean evaporation is estimated to be 60 to 70 inches per year as described in Department of Water Resources Bulletin 73-79.

13. The facility is not located in a 100-year flood zone as described in the Federal Emergency Management Agency Flood Map FIRM Community-Panel Number 060057 037 B.

WASTE CHARACTERISTICS

14. Domestic wastewater is a high strength waste, which typically contains approximately 250 mg/L of total suspended solids (TSS), and has a 5-day biological oxygen demand (BOD) about 250 mg/L. Domestic wastewater also contains coliform bacteria, and various salts including nitrogen, and phosphorus. During the fourth quarter of 2009, influent wastewater to the Orland wastewater treatment plant showed concentrations of electrical conductivity (EC) ranging from 958 to 1730 µmhos/cm, pH from 7.2 to 9.7, and total dissolved solids (TDS) ranging from 396 to 795 mg/L.

15. The industrial wastewater stream is a high salinity waste. During the fourth quarter 2009, industrial wastewater influent showed the following characteristics:

Constituent	Range
pH	6.99 - 8.38
EC	51,000 - 411,000 µmhos/cm
Hardness	240 -7,610 mg/L
Calcium	ND
Chloride	13,900 – 120,000 mg/L
Sulfate	ND
Nitrate as N	ND
TSS	15 – 1,760 mg/L
Magnesium	ND

CEQA AND OTHER CONSIDERATIONS

16. The City of Orland adopted an Environmental Impact Negative Declaration in February 1985 for the construction of the industrial brine ponds and a force main from the industrial wastewater source to the brine ponds.

17. The action to revise Waste Discharge Requirements for this facility is exempt from the provisions of the California Environmental Quality Act (Public

Resources Code Section 21000, et seq.), in accordance with Title 14, California Code of Regulations, Section 15301.

GROUNDWATER CONSIDERATIONS

18. Prior to the construction of the Class II surface impoundments, a release of brine waste from the original wastewater ponds to groundwater occurred. The discharger implemented a corrective action program in 1995, which consisted of installation of an additional layer of synthetic liner in the industrial ponds to Class II standards.

19. The magnitude and extent of pollution is not defined. Groundwater monitoring indicates that the direction of flow is east to west/southwest at a gradient of no more than 0.02 feet per foot, and that since installation of the dual liner system, concentrations of salts in groundwater have exhibited a decreasing trend.

20. The current groundwater monitoring network consists of 12 monitoring wells and at least 5 private domestic and/or irrigation wells. The initial groundwater monitoring network consisted of W-A through W-E, W-1 through W-4, and domestic and/or irrigation wells W-5 (upgradient - Vlasoff), W-6, W-7 (Barceloux), W-8 (Fortini), and W-9 (Cemetery). Order No. 96-129 required the Discharger to submit a Groundwater Monitoring Program, allowing the existing monitoring network to be incorporated into the proposal. The City included additional private wells, and monitoring wells W-F, W-G, and W-H to the monitoring program. Currently, W-E, W-G, W-2, W-3, and W-4 are reported consistently as dry, and W-H, W-7, and W-10 are no longer in use due to pump age and/or failure.

21. The current groundwater monitoring network does not adequately evaluate the extent of pollution, and does not include a detection monitoring network for the wastewater stabilization ponds and irrigation fields.

22. Monitoring data indicates that groundwater is influenced by releasing treated wastewater to the irrigation field. In the Fourth Quarter 2009 Monitoring Report, the City of Orland presents that: “The direction of groundwater flow was not determined this quarter because the water table was influenced by the release of treated wastewater from the domestic ponds into the percolation fields.”

23. Although, monitoring wells W-A through W-E appear to be representative of the same water bearing unit, the construction specifications of the remaining wells are unknown, including the current background monitoring well, W-5,

which is a private well, and therefore may not be representative of the downgradient groundwater zone of influence. The following table describes the known groundwater monitoring well specifications:

Well ID	Top of Casing (TOC) [ft MSL]	Screen Interval [ft below TOC]	Depth to water [ft bgs]
W-A	216.82	unknown	20.42
W-B	216.453	unknown	20.42
W-C	216.027	unknown	20.42
W-D	216.61	unknown	20.33
W-E	217.237	unknown	20.42
W-F	217.647	unknown	
W-G	218.993	unknown	

24. Monitoring wells W-E, W-G, W-2, W-3, and W-4 are consistently dry. During the fourth quarter of 2009, water samples were not retrieved from wells W-E and W-G, and W-2, W-3, and W-4, due to low water levels.

25. The Discharger is required to install a new upgradient monitoring well, and a detection monitoring system adjacent to the wastewater stabilization ponds and irrigation field.

WASTEWATER COLLECTION SYSTEM

26. The sanitary sewer system collects wastewater and consists of sewer pipes, manholes, and/or other conveyance system elements that direct raw sewage to the treatment facility. A “sanitary sewer overflow” (SSO) is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered SSOs, provided that the waste is fully contained within these temporary storage/conveyance facilities. Sanitary sewer overflow is also defined in State Water Resources Control Board (State Water Board) Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*. The Discharger has applied for and has been approved for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

27. SSOs consist of varying mixtures of domestic and commercial wastewater, depending on land uses in the sewage collection system. The chief causes of SSOs include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station

mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and/or contractor caused blockages.

28. SSOs often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. SSOs can cause temporary exceedance of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.

BASIN PLAN, BENEFICIAL USES, AND WATER QUALITY OBJECTIVES

29. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.

30. The beneficial uses of the underlying groundwater are domestic and agricultural supply.

31. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in surface water and groundwater.

32. The Basin Plan contains a narrative chemical constituent objective, which is intended to protect all beneficial uses, and is the narrative objective most relevant to protection of agricultural irrigations uses. In general, water sources with an electrical conductivity of 700 µmhos/cm or less are considered to have no impact on any crop. For drinking water supplies, the Basin Plan has adopted state drinking water standards (MCLs) as water quality objectives. Secondary drinking water standards for electrical conductivity have “recommended” (900 µmhos/cm), “upper” (1600 µmhos/cm), and “short-term” (2200 µmhos/cm) numeric concentrations.

ANTIDEGRADATION ANALYSIS

33. The wastewater treatment system has existed since 1958, when the first WDRs were issued. In 1985, the City of Orland began to segregate the domestic and industrial waste streams. In 1995, the City of Orland was required to implement a corrective action program as a result of a release of

brine wastes from the industrial wastewater ponds. Since implementing the corrective action program, concentrations of salts in groundwater have exhibited a decreasing trend.

34. The Discharger has not completed an anti-degradation analysis of the entire treatment facility, however constituents of concern that have the potential to degrade groundwater include salts (primarily EC, sodium, chloride, and nitrate), nutrients, and coliform organisms. The current groundwater monitoring program has not identified a reduction in groundwater quality as a result of domestic wastewater treatment; however monitoring has identified a potential hydraulic connectivity between the irrigation field and first encountered groundwater. This Order requires additional groundwater monitoring. Based on the existing record, the discharge is consistent with the anti-degradation provisions of Resolution 68-16.

PUBLIC NOTICE

35. All of the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

36. The Discharger and interested agencies and persons have been notified of the intent to revise waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

37. In a public hearing, the Regional Water Board heard and considered all comments pertaining to this facility and discharge.

IT IS HEREBY ORDERED that, pursuant to Sections 13263 and 13267 of the California Water Code, Order No. 96-129 is rescinded and the City of Orland, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions

1. The discharge of wastes from any portion of the wastewater treatment facility and the sanitary sewer system to surface waters or surface water drainage courses is prohibited.

2. The discharge of waste classified as 'hazardous' under Section 2521, Chapter 15 of Title 23 or 'designated', as defined in Section 13173 of the California Water Code is prohibited.

3. The bypass or overflow of untreated or partially treated waste is prohibited.

4. The discharge of treated wastewater downstream of the treatment plant, other than at the percolation/evaporation ponds and irrigation area described in the Findings is prohibited.

B. Discharge Specifications

1. The average daily dry weather flow of domestic wastewater shall not exceed 2.1 million gallons (mg), and the annual discharge shall not exceed 756 mg. The annual total flow to the industrial wastewater ponds shall not exceed 2.5 mg to each pond.

2. Stored wastewater or effluent shall not have a pH less than 6.5 or greater than 9.0.

3. Wastes discharged to the unlined domestic wastewater ponds shall not contain constituents in concentrations greater than:

Constituent	Units	30-Day Average	Daily Average	Monthly Maximum
TDS	mg/L lbs	650	900	 340,200[1]

[1]Based on a maximum treatment capacity of 2.1 mgd.

4. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

5. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the property owned by the Discharger.

6. The dissolved oxygen content of the upper one foot of any wastewater storage ponds shall not be less than 1.0 mg/L.

7. Wastewater ponds shall be managed to prevent the breeding of mosquitoes.

8. The facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter months. Design seasonable precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

9. Freeboard in any ponds shall never be less than two feet as measured from the water surface to the lowest point of overflow.

10. Reclaimed wastewater shall meet the criteria contained in Title 22, Division 4 of the California water Code (Section 60301).

11. The closure of surface impoundments shall be approved by the Executive Officer and shall be under the direct supervision of a registered civil engineer or certified engineering geologist.

C. General Solids Disposal Specifications

1. Any storage of residual sludge, solid waste, and biosolids at the wastewater treatment facility shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils and groundwater.

2. Residual sludge, biosolids, and solid waste shall be disposed in a manner approved by the Executive Officer and shall be consistent with Title 27.

3. Use and disposal of biosolids shall comply with Title 40, Code of Federal Regulations (CFR), Part 503.

D. Provisions

1. Within **3 months of the effective date of this Order**, the Discharger shall submit a Revised *Groundwater Detection Monitoring System Work Plan*. The work plan shall include plans for monitoring

groundwater in the vicinity of the domestic wastewater ponds and irrigation field, in addition to establishing upgradient monitoring.

2. The Discharger shall comply with the applicable sections of Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Discharges Regulated by Title 27 (Title 27 CCR Section 20005 et seq.), dated September 2003, for the Class II surface impoundments, which are hereby incorporated into this Order.

3. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, for the domestic wastewater disposal ponds, which are hereby incorporated into this Order

4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2010-0087 which is attached to and made part of this Order.

5. The Discharger shall maintain legible records of the volume and type of waste discharge to the surface impoundments and the manner and location of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the board and of the State Water Resources Control Board at anytime during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board.

6. The Discharger shall provide proof to the board **within sixty days after completing final closure** that the deed to the surface impoundment facility property, or some other instrument that is normally examined during title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:

    a. The parcel has been used for disposal of liquid wastes;
    b. Land use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in the WDRs for the surface impoundment; and,
    c. In the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any correction action needed to address a release, then the responsibility for carrying out such work falls to the property owner.

7. In the event of any change in control or ownership of the wastewater treatment facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provisions B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.

8. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

9. The Regional Water Board will review this Order periodically and will revise requirements when necessary.

I PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 July 2010.

Original signed by Kenneth D. Landau for

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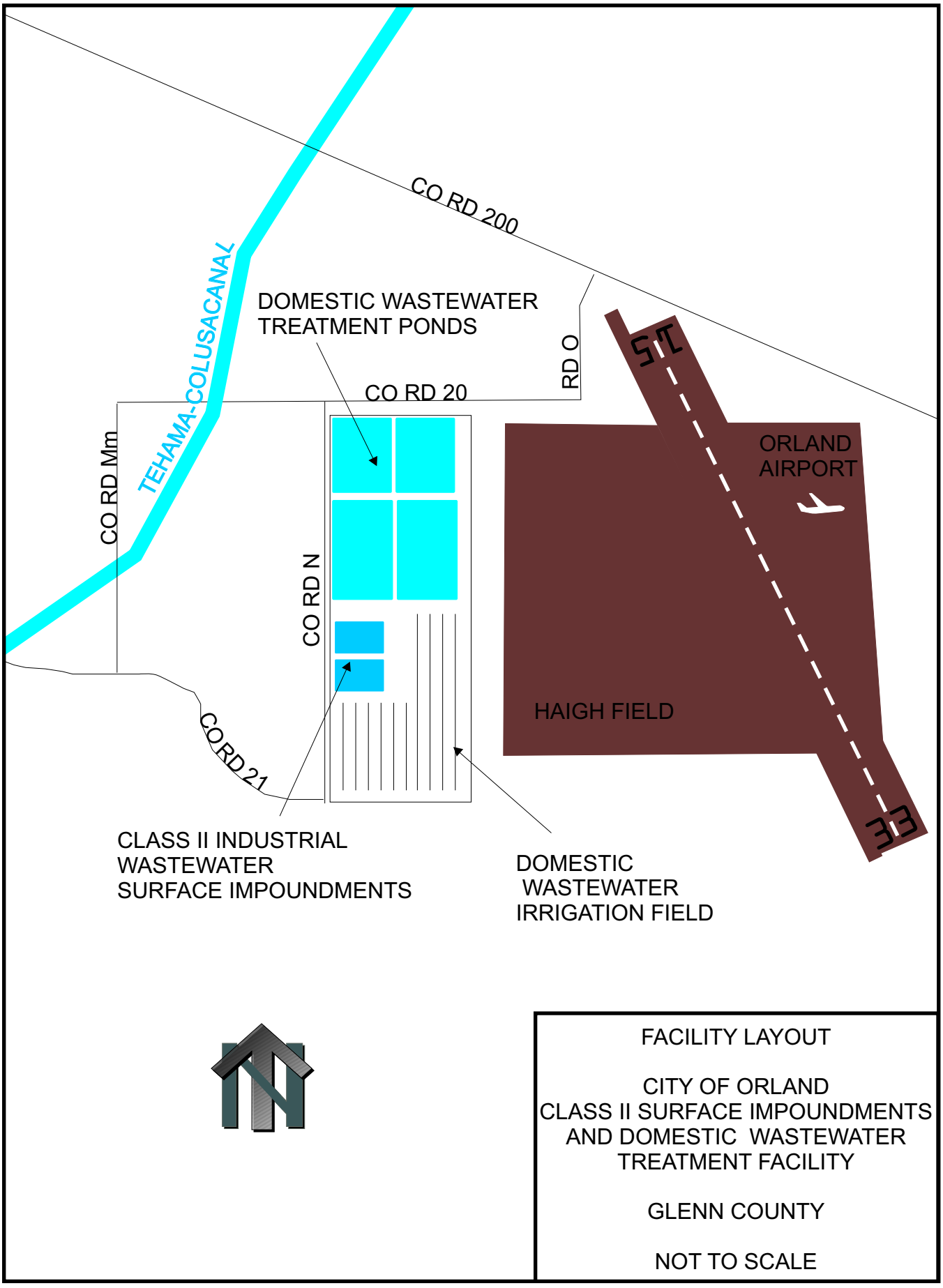
PAMELA C. CREEDON, Executive Officer

REVISED
KB: 28-Apr-10



FACILITY LAYOUT

CITY OF ORLAND
CLASS II SURFACE IMPOUNDMENTS
AND DOMESTIC WASTEWATER
TREATMENT FACILITY

GLENN COUNTY

NOT TO SCALE

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM ORDER NO. R5-2010-0087
FOR
CITY OF ORLAND
CLASS II SURFACE IMPOUNDMENTS
AND DOMESTIC WASTEWATER TREATMENT FACILITY
GLENN COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring the industrial and domestic wastewater treatment facility influent, wastewater ponds and surface impoundments, groundwater, and biosolids disposal. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Central Valley Water Board staff shall approve specific sampling locations prior to any sampling activities. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test dissolved oxygen, pH, and electrical conductivity) may be used provided that:

1. The user is trained in proper use and maintenance of the instruments;

2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are submitted as described in the “Reporting” section of this MRP.

Domestic Wastewater Influent Monitoring (INF-001)

The Discharger shall monitor influent domestic wastewater (INF-001) in accordance with the following schedule:

Domestic Wastewater Influent – INF-001

Constituent	Units	Frequency
Flow	gallons	Daily
Electrical Conductance (EC)	µmhos/cm	Weekly
Total Dissolved Solids (TDS)	mg/L	Quarterly
pH	S.U.	Weekly
Temperature	°C or °F	Weekly
Biological Oxygen Demand ($BOD_{5\text{-}day}$)	mg/L	Quarterly

Class II Surface Impoundments (SI-001 and SI-002)

The Discharger shall monitor each Class II industrial surface impoundment according to the following schedule:

Constituent	Units	Frequency
Flow	gallons	Daily
Electrical Conductance (EC)	µmhos/cm	Weekly
Total Dissolved Solids (TDS)	mg/L	Quarterly
pH	S.U.	Weekly
Temperature	°C or °F	Weekly
Chemical Oxygen Demand (COD)	mg/L	Quarterly
Suspended Solids (SS)	mg/L	Quarterly
Nitrate as N	mg/L	Quarterly
Chloride	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Total Hardness	mg/L	Quarterly

Domestic Wastewater Ponds (POND-001 – POND-004)

The Discharger shall monitor each domestic wastewater pond according to the following schedule:

Constituent	Units	Frequency
EC	µmhos/cm	Quarterly
Dissolved Oxygen (DO)	mg/L	Quarterly
Freeboard	ft	Monthly
TDS	mg/L	Quarterly
pH	S.U.	Monthly
Temperature	°C or °F	Monthly

Irrigation Area (IRR-001)

The date and quantity of treated domestic wastewater applied to the irrigation field shall be recorded (in gallons) and reported with each quarterly monitoring report. The irrigation area shall be inspected for standing water following periods of irrigation.

Biosolids (BIO-001)

The Discharger shall keep records regarding biosolids generated by the treatment processes, including any analytical test results; the quantity of biosolids removed from the ponds and temporarily stored on site; and steps taken to prevent nuisance conditions. Records shall be stored onsite and available for review during inspections.

If biosolids are transported off-site for disposal, then the Discharger shall submit records identifying the hauling company, the amount of biosolids transported, the date removed from the facility, the disposal facility name and address, and copies of all analytical data required by the entity accepting the waste. These records shall be submitted as part of the Annual Monitoring Report.

A composite sample of sludge (BIO-001) shall be collected prior to disposal in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance* document, August 1989 and tested for the following:

Constituent	Units	Type of Sample
moisture content	% moisture	Grab
Title 22, CCR or California Assessment Manual (CAM-17) Heavy Metals	µg/kg	Grab
Volatile Organic Compounds (VOCs)	µg/kg	Grab

Groundwater

The current groundwater detection monitoring network includes 12 monitoring wells and at least 5 domestic and/or irrigations wells. The initial groundwater monitoring network includes monitoring wells W-A through W-E around the class II surface impoundments, and W-1 through W-4 downgradient of the facility. W-5 (Vlasoff), a private well, is considered the upgradient (background) well. A number of additional private wells have been included into the monitoring

network; however the majority of these wells are located over 2,000 feet from the facility. Additionally, a number of monitoring wells are consistently dry and/or no longer in use due to mechanical failures.

The Discharger shall amend the groundwater detection and evaluation monitoring system to evaluate the magnitude and extent of industrial wastewater pollution, and better determine effects of the domestic wastewater stabilization ponds and irrigation field. Prior to construction of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Regional Water Board for review and approval. Once installed, all new monitoring wells shall be added to the MRP, and shall be sampled and analyzed according to the schedule below.

Prior to well purging, groundwater elevations shall be measured. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated and used to determine groundwater gradient and direction of flow. The monitoring wells shall be purged at least three well volumes or until temperature, pH, and electrical conductivity have stabilized. Samples shall be collected and analyzed using approved EPA methods. Groundwater monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Frequency
Groundwater Elevation	0.01 feet MSL	Measurement	Quarterly
Groundwater Gradient	feet/foot	Calculated	Quarterly
Groundwater Gradient Direction	degrees	Calculated	Quarterly
pH	S.U.	Grab	Quarterly
EC	µmhos/cm	Grab	Quarterly
Nitrogen	mg/L	Grab	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
Total Coliform	MPN/100 mL	Grab	Quarterly
General Minerals[1]	mg/L	Grab	Quarterly
Title 22 Heavy Metals	µg/L	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Chemical Oxygen Demand (COD)	mg/L	Grab	Quarterly

[1]General Minerals shall include, at a minimum, boron, bromide, calcium, chloride, fluoride, magnesium, phosphate, potassium, sodium, sulfate, total alkalinity, and hardness as $CaCO_3$.

Leachate Collection and Recovery System (LCRS-001)

The Industrial Class II Surface Impoundment Leachate Collection and Recovery System (LCRS) sump shall be inspected monthly for leakage. Upon detection of a leak in the previously dry LCRS, the Discharger shall immediately sample the liquid and continue to sample the liquid at the following frequency:

Constituent	Units	Frequency
Flow	gallons	Daily
EC	µmhos/cm	Weekly
TDS	mg/L	Weekly
pH	S.U.	Weekly
Temperature	°C or °F	Weekly
COD	mg/L	Quarterly
Nitrate as N	mg/L	Quarterly
Chloride	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Suspended Solids	mg/L	Quarterly
Total Hardness	mg/L	Quarterly

Reporting

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type, and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with Waste Discharge Requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported to the Regional Water Board.

The Discharger shall submit quarterly monitoring reports to the Regional Water Board by the **1st day of the second month after the quarter** (i.e. the January – March quarter is due by 1st May) each year.

As required by the California Business and Professions Code Section 6735, 7835, and 7835.1, all quarterly monitoring reports shall be prepared under the direct supervision of a registered Professional Engineer or Geologist and signed by the registered professional.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a

report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agents, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: *Original signed by Kenneth D. Landau for*
PAMELA C. CREEDON, Executive Officer

29 July 2010
Date

INFORMATION SHEET

Background

The City of Orland owns and operates a wastewater treatment facility that accepts domestic wastewater from the City of Orland and industrial wastewater from two olive processors and a nut processor. Domestic wastewater and industrial wastewater are processed separately. The domestic waste facility consists of four unlined stabilization ponds and an adjacent 44-acre irrigation field. The average domestic wastewater flow to the stabilization ponds is 1.0 million gallons per day. Approximately 1.5 million gallons of wastewater from the stabilization ponds are transferred to the irrigation field 1 to 2 times per week. The industrial waste facility consists of two lined evaporation ponds covering 5.3 acres, and receives an average of 2.5 million gallons per year. The industrial wastewater ponds are designed in accordance with Title 27, California Code of Regulations Class II standards.

The industrial surface impoundments were reconstructed to Class II standards in 1995. Prior to the reconstruction, a release of waste from the original industrial wastewater ponds to groundwater occurred. Soils underlying the facility are highly permeable. The discharger implemented a corrective action program in 1995, which consisted of installation of an additional layer of synthetic liner in the industrial ponds to Class II standards. The magnitude and extent of pollution is not defined. Groundwater monitoring indicates that the direction of flow is east to west/southwest at a gradient of no more than 0.02 feet per foot, and that since installation of the dual liner system, concentrations of salts in groundwater have exhibited a decreasing trend.

Groundwater Conditions

The current ground water monitoring network consists of 12 monitoring wells, and at least 5 private domestic and/or irrigation wells. Each well is monitored annually, and only wells W-A through W-G are sampled quarterly. The initial groundwater monitoring network consisted of W-A through W-E, W-1 through W-4, and domestic and/or irrigation wells W-5 (upgradient - Vlasoff), W-6, W-7 (Barceloux), W-8 (Fortini), and W-9 (Cemetery). Order No. 96-129 required the Discharger to submit a Groundwater Monitoring Program, allowing the existing monitoring network to be incorporated into the proposal. The City included additional private wells, and monitoring wells W-F, W-G, and W-H to the monitoring program. Currently, W-E, W-G, W-2, W-3, and W-4 are reported consistently as dry, and W-H, W-7, and W-10 are no longer in use due to pump age and/or failure.

The current groundwater monitoring network does not adequately evaluate the extent of pollution, and does not include a detection monitoring network for the wastewater stabilization ponds and irrigation fields.

- Monitoring data indicates that groundwater is influenced by releasing treated wastewater to the irrigation field. In the Fourth Quarter 2009 Monitoring Report, the City of Orland presents that: "The direction of groundwater flow was not determined this quarter because the water table was influenced by the release of treated wastewater from the domestic ponds into the percolation fields."
- Secondly, although, monitoring wells W-A through W-E appear to be representative of the same water bearing unit, the construction specifications of the remaining wells are unknown, including the current background monitoring well, W-5, which is a private well, and therefore may not be representative of the downgradient groundwater zone of influence.
- Additionally, monitoring wells W-E, W-G, W-2, W-3, and W-4 are consistently dry. During the fourth quarter of 2009, water samples were not retrieved from wells W-E and W-G, and W-2, W-3, and W-4, due to low water levels.

The Discharger is required to install a new upgradient monitoring well, and submit a work plan to amend the current groundwater monitoring network.

Basin Plan, Beneficial Uses, and Water Quality Objectives
The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. The beneficial uses of the underlying groundwater are domestic and agricultural supply.

Title 27
Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27. Treatment and storage facilities for sludge that are part of the WWTF are considered exempt from Title 27 under section 20090(a), provided that the facilities not result in a violation of any water quality objective. However, residual sludge that will not be subjected to further treatment by the WWTF is not exempt

from Title 27. Solid waste (e.g., grit and screenings) that results from treatment of domestic sewage and industrial waste also is not exempt from Title 27. This residual sludge and solid waste are subject to the provisions of Title 27.

Discharge Prohibitions, Specifications and Provisions
The Discharger's water balance/capacity analysis indicates that the WWTP has the following capacity:

Condition	Capacity
Average daily dry weather flow [1]	2.1 MGD
Total annual flow to the domestic ponds	756 MG
Total annual flow to the industrial ponds	2.5 MG

[1] Based on the months of June through September, inclusive.

The effluent limits for TDS of 650 mg/L monthly average and 900 mg/L daily maximum are based on reasonable expectations of performance of the secondary treatment system.

The Monitoring and Reporting Program is designed to verify compliance with effluent limitations and operational requirements of the WDRs.