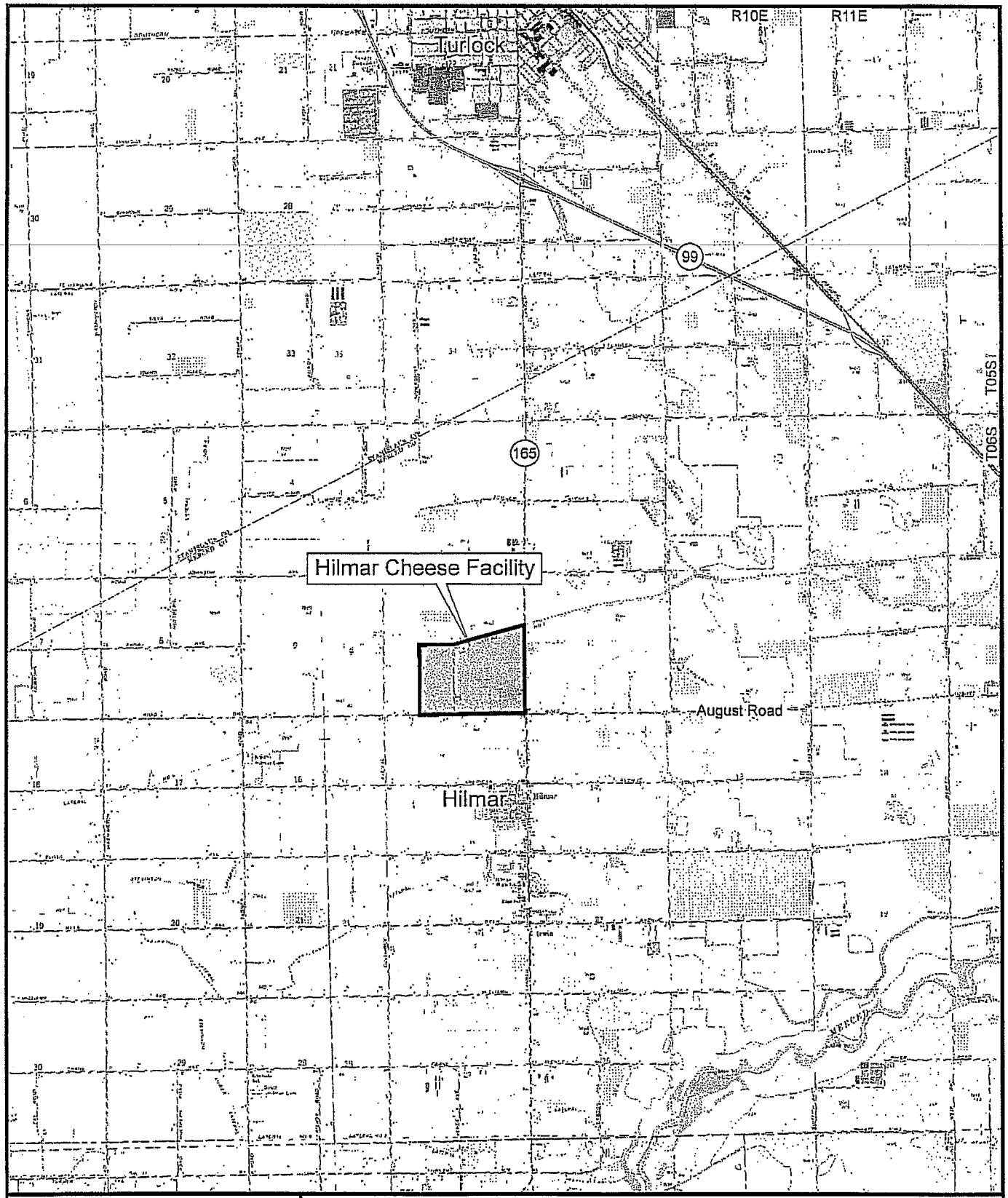
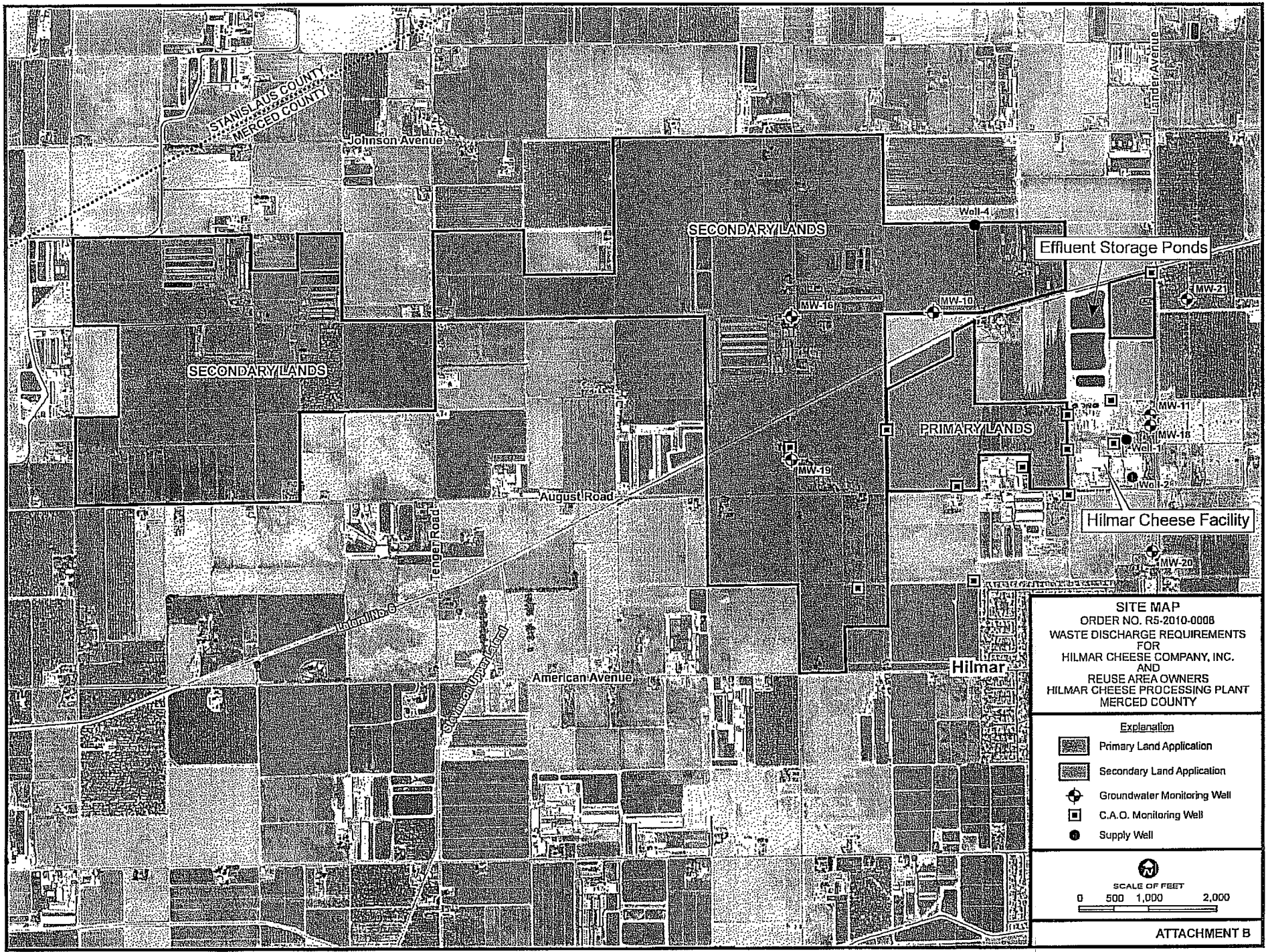


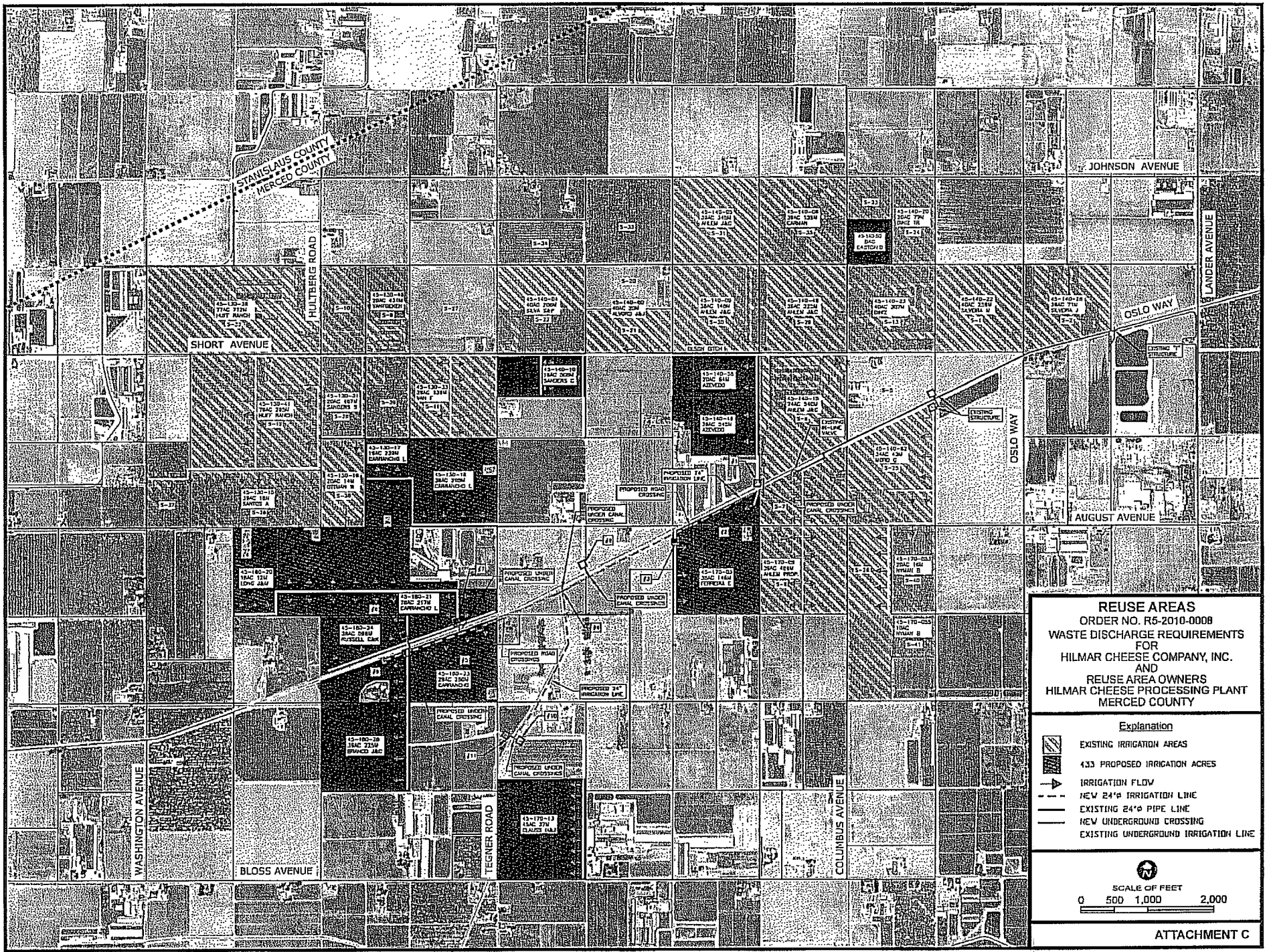
Map Source:
HATCH & TURLOCK 7.5 Minute USGS Quadrangles
Section 10, T06S, R10E, MDB&M

SCALE
0 0.25 0.5 1 Mile

LOCATION MAP
ORDER NO. R5-2010-0008
WASTE DISCHARGE REQUIREMENTS
FOR
HILMAR CHEESE COMPANY, INC.
AND
REUSE AREA OWNERS
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY

ATTACHMENT A


STANISLAUS COUNTY
MERCED COUNTY
Johnson Avenue
Lander Avenue
SECONDARY LANDS
Well-4
Effluent Storage Ponds
MW-16
MW-10
MW-21
SECONDARY LANDS
PRIMARY LANDS
MW-11
MW-18
Well-1
MW-19
Well-2
August Road
Hilmar Cheese Facility
MW-20
Tegner Road
Lander Ave
Santa Fe Railroad
American Avenue
Hilmar
SITE MAP
ORDER NO. R5-2010-0008
WASTE DISCHARGE REQUIREMENTS
FOR
HILMAR CHEESE COMPANY, INC.
AND
REUSE AREA OWNERS
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY
Explanation
Primary Land Application
Secondary Land Application
Groundwater Monitoring Well
C.A.O. Monitoring Well
Supply Well
SCALE OF FEET
0 500 1,000 2,000
ATTACHMENT B



REUSE AREAS

ORDER NO. R5-2010-0008
WASTE DISCHARGE REQUIREMENTS
FOR
HILMAR CHEESE COMPANY, INC.
AND
REUSE AREA OWNERS
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY

Explanation

- EXISTING IRRIGATION AREAS
- 433 PROPOSED IRRIGATION ACRES
- IRRIGATION FLOW
- NEW 24"ø IRRIGATION LINE
- EXISTING 24"ø PIPE LINE
- NEW UNDERGROUND CROSSING
- EXISTING UNDERGROUND IRRIGATION LINE

SCALE OF FEET
0 500 1,000 2,000

ATTACHMENT C

ORDER R5-2010-0008

ATTACHMENT D
Hilmar Cheese Company Reuse Areas

Secondary Lands				
Field ID	**Property Owner/Operator**	**Irrigation Acres**	**Property ID**	**Dairy Property[1]**
S1	Jose Silveira	40	045-014-022	Yes
S2	Jose Silveira	25	045-014-028	Yes
S6	Jim Ahlem	36	045-017-009	Yes
S7	Jim Ahlem	20	045-014-075	Yes
S8	Jim Ahlem	14	045-014-075	Yes
S9	Ken Van Foeken	15	045-013-046	Yes
S10	Loretta Koernig	15	045-013-048	No
S11	Ken Van Foeken	35	045-013-033	Yes
S12	Finley Huff	72	045-013-041	Yes
S13	Antonio & Maria Diniz	22	045-014-023	Yes
S21	James Ahlem	20	045-014-067	Yes
S22	Tony Madruga	20	045-014-069	No
S23	Glennette Woods	8	045-014-051	No
S24	Antonio & Maria Diniz	20	045-014-020	Yes
S25	Jim Ahlem	37	045-014-078	Yes
S26	Jim Ahlem	19	045-017-024	Yes
S28	Lloyd Fantiazia	20	045-013-037	Yes
S29	Jim Ahlem	39	045-014-048	Yes
S30	Jim Ahlem	38	045-014-009	Yes
S31	Jim Ahlem	39	045-014-005	Yes
S32	Finley Huff	52	045-013-039	Yes
S36	Mary B. Santos Trust	39	045-013-015	No
S37	Mary B. Santos Trust	27	045-013-029	No
S38	Ray Ottman	20	045-013-016	No
S39	Shawn Sanders	20	045-013-031	No
S40	Delton, Lloyd & Brad Nyman	20	045-170-053	Yes
S41	Delton, Lloyd & Brad Nyman	10	045-170-055	Yes
S42	Ed Gomes	20	045-140-010	No
TBD	Tiberio Azevedo	20	045-140-058	Yes
TBD	Tiberio Azevedo	36	045-140-049	Yes
TBD	Mark Ferreira	45	045-170-003	Yes
TBD	Richard & Sharon Clauss	45	045-170-013	Yes
TBD	Lucille Carrancho	38	045-130-018	Yes
TBD	Lucille Carrancho	78	045-180-021	Yes
TBD	Lucille Carrancho	29	045-180-023	Yes
TBD	Lucille Carrancho	19	045-130-017	Yes
TBD	C.A. & Kirsten Russell	38	045-180-024	Yes
TBD	Joe & Cathy Branco	39	045-180-028	Yes
TBD	Dan Easton	8	045-014-050	No
TBD	Norman Long	18	045-180-020	No
TOTAL		**1175**		

Primary Lands				
Field ID	**Property Owner/Operator**	**Irrigation Acres**	**Property ID**	**Dairy Property[1]**
NA	D. Nyman	23.8	045-140-041	No
NA	D. Nyman	57.8	045-140-030	No
NA	HCC Properties	13.1	045-140-037	No
TOTAL		**94.7**		

1. Does not necessarily indicate that the property contains a dairy, but that the property receives dairy wastewater.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2010-0008

FOR
HILMAR CHEESE COMPANY, INC.,
AND
REUSE AREA OWNERS
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) Section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that: the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 12 and a list of the constituents required for the monitoring of Priority Pollutants is included in Table 1, which is presented on page 13.

INFLUENT MONITORING

Influent samples shall be collected prior to discharge from the equalization tanks to the dissolved air floatation tanks. Influent monitoring shall include at least the following:

Frequency	Constituent/Parameter	Units	Sample Type
Weekly	pH	pH Units	Grab
Weekly	EC	µmhos/cm	Grab
Monthly	BOD_5	mg/L	24-hour composite

EFFLUENT MONITORING

Effluent samples shall be collected just prior to discharge to the effluent storage ponds or to the Reuse Areas. Effluent monitoring shall include at least the following:

Frequency	Constituent/Parameter	Units	Sample Type
Continuous	Flow	mgd	Meter
Weekly	pH	pH Units	Grab
Weekly	EC	µmhos/cm	Grab
Weekly	TDS	mg/L	24-hour composite
Weekly	BOD_5	mg/L	24-hour composite
Weekly	Nitrate as N	mg/L	24-hour composite
Weekly	TKN	mg/L	24-hour composite
Weekly	Ammonia as N	mg/L	24-hour composite
Weekly	Total Nitrogen	mg/L	Calculated
Weekly	Chloride	mg/L	24-hour composite
Weekly	Sodium	mg/L	24-hour composite
Quarterly	General Minerals	mg/L	24-hour composite
Quarterly	Iron	mg/L	24-hour composite
Quarterly	Manganese	mg/L	24-hour composite
Monthly	Monthly Average Flow	mgd	Computed
Varies	Priority Pollutants (see Table 1)	Varies[1]	Varies

[1] mg/L or ug/L, as appropriate

POND MONITORING

Effluent storage ponds monitoring shall include at least the following:

Frequency	Constituent/Parameter	Units	Sample Type
Weekly	DO	mg/L	Grab
Weekly	Freeboard	Feet[1]	Calculated

[1] To nearest tenth of a foot

Permanent markers (e.g., staff gauges) shall be placed in the effluent storage ponds. The markers shall have calibrations indicating water level at the design capacity and available operational freeboard. The Discharger shall inspect the condition of the effluent storage ponds once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the effluent storage pond surface and their location; whether burrowing animals or insects are present; and the color of the pond water (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.).

GROUNDWATER MONITORING

The existing groundwater monitoring network currently consists of 23 monitoring wells (MW-1 through MW-23). Upon completion of proposed additional downgradient wells and in accordance with Provision 19 of Order R5-2010-0008, the Discharger shall submit for approval by the Executive Officer, a monitoring well network that will demonstrate ongoing compliance with the Groundwater Limitations of Order R5-2010-0008. Pending approval of the proposed monitoring well network, the existing monitoring well network shall be used to demonstrate compliance. The constituents monitored for and the frequencies listed below pertain only to this MRP.

The wells that comprise the monitoring well network are also subject to Cleanup and Abatement Order R5-2004-0772, which has its own sampling requirements that are to be followed independent of the monitoring requirements presented herein.

Prior to collecting samples, water levels will be measured in all monitoring wells. After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall monitor wells for the following:

Frequency	Constituent/Parameter	Units	Sample Type
Quarterly	Depth to groundwater	Feet[1]	Measured
Quarterly	Groundwater Elevation	Feet[2]	Calculated
Quarterly	pH	pH Units	Grab
Quarterly	EC	µmhos/cm	Grab
Quarterly	Nitrate as N	mg/L	Grab
Quarterly	TKN	mg/L	Grab
Quarterly	Total Nitrogen (equals TKN + Nitrate as N)	mg/L	Grab
Quarterly	Total Organic Carbon	mg/L	Grab
Quarterly	Arsenic	ug/L	Grab
Quarterly	Iron	ug/L	Grab
Quarterly	Manganese	ug/L	Grab
Quarterly	General Minerals	mg/L	Grab

[1]To nearest hundredth of a foot.
[2]To nearest hundredth of a foot above mean sea level.

SOURCE WATER MONITORING

For each source (WS-1 or WS-2 or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing flow data for the most recent twelve months and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements.

Frequency	Constituent/Parameter	Units	Sample Type
Quarterly	EC	µmhos/cm	Grab
Quarterly	Nitrate as N	mg/L	Grab
Quarterly	TKN	mg/L	Grab
Quarterly	Total Nitrogen (equals TKN + Nitrate as N)	mg/L	Calculated
Annually	General Minerals	mg/L	Grab

REUSE AREA MONITORING

The Discharger shall monitor the effluent and irrigation water applied to each Reuse Area parcel, as well as soil in each Reuse Area parcel, for the constituents and at the frequency as specified below. This information will be used to evaluate the hydraulic, nutrient, and salt loadings to each individual Reuse Area parcel, and must be used to develop and implement the Nutrient Management Plan required by Provision F.22. The Discharger is encouraged to collect and use additional data, as necessary, to refine nutrient management.

Hydraulic and Waste Constituent Loading Monitoring

Reuse Area parcels receiving deliveries of reused water, dairy wastewater, and/or freshwater (i.e., groundwater or canal water) shall be monitored for the following:

1. Crop Information
    a. Crop type (e.g., silage corn, wheat, oats).
    b. Crop planting or harvesting information (e.g., harvested tonnage in tons/acre).
2. Hydraulic Loading
    a. Individual estimated monthly volumes (in million gallons) of reused water, freshwater, and dairy wastewater applied.
    b. Combined estimated monthly volume (in million gallons) of reused water, freshwater, and dairy wastewater applied.
    c. Monthly hydraulic loading rate (in inches) based on the combined estimated volume of reused water, freshwater, and dairy wastewater applied.
    d. Monthly total precipitation (in inches) from either an onsite precipitation gage station or through published sources (cite data source(s).
3. BOD_5 Loading
    a. Quantity of BOD_5 (in lbs) applied based on the total volume of reused water from any source applied to the parcel and the monthly average value for effluent BOD_5
    b. Monthly average daily BOD_5 loading rate (lbs/acre-day) based on the quantity of BOD_5 applied during the month and number of days in the month
4. Nitrogen Loading
    a. Monthly quantity of Total Nitrogen (in lbs) from reused water applied based on the total volume of reused water applied to the parcel and the monthly average value for effluent total nitrogen.
    b. Monthly quantity of Total Nitrogen (in lbs) from dairy wastewater applied based on the total volume of dairy wastewater applied to the parcel and the estimated value for dairy wastewater Total Nitrogen concentration.
    c. Monthly quantity of Total Nitrogen (in lbs) from dairy manure applied based on the total volume of manure applied to the parcel and the estimated value for manure Total Nitrogen concentration.
    d. Monthly quantity of Total Nitrogen (in lbs) from fertilizer applied based on the total volume of fertilizer applied to the parcel and the estimated value for fertilizer Total Nitrogen concentration.

e. Monthly quantity of Total Nitrogen (in lbs) applied from all sources of nitrogen.

f. Monthly Total Nitrogen loading rate (in lbs/acre-month) based on all sources of applied nitrogen.

g. Annual Cumulative Total Nitrogen loading rate (in lbs/acre-year) on a calendar year basis.

5. TDS Loading

a. Monthly quantity of TDS (in lbs) from reused water applied based on the total volume of reused water applied to the parcel and the monthly average value for effluent TDS.

b. Monthly quantity of TDS (in lbs) from dairy wastewater applied based on the total volume of dairy wastewater applied to the parcel and the estimated value for dairy wastewater TDS concentration.

c. Monthly quantity of TDS (in lbs) from dairy manure applied based on the total volume of manure applied to the parcel and the estimated value for manure TDS concentration.

d. Monthly quantity of TDS (in lbs) applied from reused water, dairy wastewater, and manure.

e. Monthly Total TDS loading rate (in lbs/acre-month) based on TDS loadings from reused water, dairy wastewater, and manure.

f. Annual Cumulative TDS loading rate (in lbs/acre-year) on a calendar year basis.

At least daily, the Discharger shall make visual observations regarding offsite discharge, standing water (indicate approximate depth), presence or absence of objectionable odors or vectors, and general compliance with Discharge Prohibitions and Recycling Specifications.

Soil Monitoring

The Discharger shall establish, with Central Valley Water Board staff concurrence, monitoring locations within at least seven representative parcels in the Reuse Area and at least two locations to represent background conditions in areas that are cropped in a manner similar to Reuse Area parcels but do not receive applications of reused water. The samples shall be collected and analyzed for the following constituents.

Frequency	Constituent/Parameter	Units	Soil Profile
Annually	Total Organic Carbon	mg/kg	4 feet[1]
Annually	EC	µmhos/cm	4 feet[1]
Annually	Soil pH	pH Units	4 feet[1]
Annually	Phosphorus	mg/kg	4 feet[1]
Annually	Nitrate as N (equals TKN + Nitrate as N)	mg/kg	4 feet[1]
Annually	TKN	mg/kg	4 feet[1]
Annually	Total Nitrogen	mg/kg	4 feet[1]

[1] Samples to be collected at 6 inches, 2 feet, and 4 feet.

Soil monitoring data shall be analyzed to determine the Plant Available Nitrogen in the upper four feet of the soil profile in monitored parcels and the background location. This information shall be used by the Discharger in its development and implementation of the Nutrient Management Plan required by Provision F.20.

STORM WATER MONITORING

Representative storm water samples shall be collected from the storm water retention basin in accordance with the requirements listed below. Storm water samples need only be collected when the storm water retention basin contains water at the time of sample collection per the specified sampling frequency. The storm water monitoring shall include at least the following:

Frequency	Constituent/Parameter	Units	Sample Type
Quarterly	EC	µmhos/cm	Grab
Quarterly	Nitrate as N	mg/L	Grab
Quarterly	TKN	mg/L	Grab
Quarterly	Total Nitrogen (equals TKN + Nitrate as N)	mg/L	Calculated
Quarterly	Sodium	mg/L	Grab
Quarterly	Chloride	mg/L	Grab
Quarterly	BOD_5	mg/L	Grab
Quarterly	Freeboard	Feet[1]	Calculated

[1] To nearest tenth of a foot

Permanent markers (e.g., staff gauges) shall be placed in the storm water retention basin. The markers shall have calibrations indicating water level at the design capacity and available operational freeboard. The Discharger shall inspect the condition of the storm water retention basin once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the storm water retention basin surface and their location; whether burrowing animals or insects are present; and the color of the pond water (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.).

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report	**1 May**
Second Quarter Monitoring Report	**1 August**
Third Quarter Monitoring Report	**1 November**
Fourth Quarter Monitoring Report	**1 February**.

Results of annual monitoring shall be reported in the next quarterly report after the sampling has occurred.

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any exceedances that occurred during the reporting period and all actions taken or planned for correcting exceedance, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included in all monitoring reports, as well as report transmittal letters:

- Hilmar Cheese Company

  Cheese Processing Plant.

  MRP R5-2010-0008

  Contact Information (telephone and e-mail)

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. Monitoring data or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. If the chief plant operator is not in direct line of supervision of the laboratory function for a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

A. All Quarterly Monitoring Reports shall include the following:

Wastewater reporting:

1. The results of influent, effluent, and effluent storage pond monitoring specified on pages 2 and 3.
2. For each month of the quarter, calculation of the maximum daily and monthly average daily discharge flow to the effluent storage ponds.
3. For each month of the quarter, the volume of RO concentrate generated and the method of disposal.
4. For each month of the quarter, calculation of the average monthly total nitrogen concentration in the discharge to the Reuse Area.
5. A summary of the notations made in the effluent storage pond monitoring log during each quarter. The entire contents of the log do not need to be submitted.

Groundwater reporting:

1. The results of groundwater monitoring specified on pages 3 and 4.
2. For each monitoring well, a table showing constituent concentrations through the current quarter.
3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also depict the locations of monitoring wells, effluent storage ponds, storm water ponds, Reuse Area parcels, and subsurface tile drainage networks and associated pumping stations.

Source water reporting:

1. The results of source water monitoring (except general minerals) specified on page 4.

Reuse Area reporting:

1. For each Quarter, the names and parcel numbers of the Reuse Area that received wastewater including the volume applied and the dates it was applied.

2. The names and parcel numbers of any parcels added or removed from the Reuse Area during the Quarter.

B. Fourth Quarter Monitoring Reports, in addition to above, shall include:

Wastewater treatment facility information:

1. The names and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
4. A statement whether the current operation and maintenance manual, sampling plan, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.
5. A statement certifying when wastewater collection sumps were last inspected for containment integrity, including identification of who performed the inspection.
6. A description of the progress of salinity reduction measures to reduce the salinity in discharge to the extent feasible.

Source Water reporting:

1. The results of annual source water monitoring for general minerals.

Reuse Area reporting

1. The results of reuse area monitoring specified on pages 4 through 7.
2. An updated map showing all Reuse Area parcels and indicating which parcels were used for land application of wastewater during the annual reporting period.
3. A summary of an evaluation of the effectiveness of the Nutrient Management Plan in minimizing groundwater degradation for nitrogen constituents.
4. Water balances for the annual reporting period based on a calendar year and presented monthly in spreadsheet form. The water balances shall evaluate the following:
    a. Monthly volume of reused water discharged to the effluent storage ponds
    b. Monthly volume of reused water, dairy wastewater, and fresh water discharged to individual Reuse Area parcels
    c. Area (in acres) of individual Reuse Area parcels receiving discharges each month of reused water, dairy wastewater, and/or freshwater

d. Monthly average ET_o (observed evapotranspiration) - Information sources include California Irrigation Management Information System (CIMIS) http://www.cimis.water.ca.gov/

e. Monthly crop uptake for individual Reuse Area parcels for each type of crop grown (cite references for irrigation efficiencies and crop coefficients).

5. Annual BOD, nitrogen, and TDS loading calculations.

The Discharger shall implement the above monitoring program by 1 April 2010.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

29 January 2010
(Date)

JSP/DKP: 01/29/10

GLOSSARY

BOD_5	Five-day biochemical oxygen demand
CBOD	Carbonaceous BOD
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
NTU	Nephelometric turbidity unit
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-Hour Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.
Daily	Samples shall be collected every day except weekends or holidays.
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.
Weekly	Samples shall be collected at least once per week.
Twice Monthly	Sample shall be collected at least twice per month during nonconsecutive weeks.
Monthly	Samples shall be collected at least once per month.
Bi Monthly	Samples shall be collected once every two (i.e., six times per year) during non-consecutive months.
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise approved, samples shall be collected in January, April, July, and October.
Semiannually	Samples shall be collected once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.
Annually	Samples shall be collected at least once per year; in October, unless another month is specified.
mg/L	Milligrams per liter
mL/L	Milliliters [of solids] per liter
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
General Minerals	Analysis for General Minerals shall include at least the following:

Alkalinity	Chloride	Sodium
Bicarbonate	Hardness	Sulfate
Calcium	Magnesium	TDS
Carbonate	Potassium	

General Minerals analyses shall be accompanied by documentation of cation/anion balance.

Table 1. Priority Pollutants

Inorganics[1]	*Organics*[2 (cont)]	*Organics*[2 (cont)]	*Organics*[2 (cont)]
Antimony	1,1-Dichloroethane	Acenaphthylene	Fluoranthene
Arsenic	1,2-Dichloroethane	Anthracene	Hexachlorobenzene
Beryllium	1,1-Dichloroethylene	Benzidine	Hexachlorobutadiene
Cadmium	1,2-Dichloropropane	Benzo(a)Anthracene	Hexachlorocyclopentadiene
Chromium (III)	1,3-Dichloropropylene	Benzo(a)pyrene	Hexachloroethane
Chromium (VI)	Ethylbenzene	Benzo(b)fluoranthene	Indeno(1,2,3-c,d)pyrene
Copper	Methyl Bromide	Benzo(g,h,i)perylene	Isophorone
Lead	Methyl Chloride	Benzo(k)fluoranthene	Naphthalene
Mercury	Methylene Chloride	Bis(2-chloroethoxy) methane	Nitrobenzene
Nickel	1,1,2,2-Tetrachloroethane	Bis(2-chloroethyl) ether	N-Nitrosodimethylamine
Selenium	Tetrachloroethylene (PCE)	Bis(2-chloroisopropyl) ether	N-Nitrosodi-n-Propylamine
Silver	Toluene	Bis(2-Ethylhexyl)phthalate	N-Nitrosodiphenylamine
Thallium	1,2-Trans-Dichloroethylene	4-Bromophenyl phenyl ether	Phenanthrene
Zinc	1,1,1-Trichloroethane	Butylbenzyl Phthalate	Pyrene
Cyanide	1,1,2-Trichloroethane	2-Chloronaphthalene	1,2,4-Trichlorobenzene
Asbestos	Trichloroethylene (TCE)	4-Chlorophenyl Phenyl Ether	
	Vinyl chloride	Chrysene	
Organics[2]	2-Chlorophenol	Dibenzo(a,h)Anthracene	
Acrolein	2,4-Dichlorophenol	1,2-Dichlorobenzene	
Acrylonitrile	2,4-Dimethylphenol	1,3-Dichlorobenzene	
Benzene	2-Methyl-4,6-Dinitrophenol	1,4-Dichlorobenzene	
Bromoform	2,4-Dinitrophenol	3,3'-Dichlorobenzidine	
Carbon tetrachloride	2-Nitrophenol	Diethyl phthalate	
Chlorobenzene	4-Nitrophenol	Dimethyl phthalate	
Chlorodibromomethane	3-Methyl-4-Chlorophenol	Di-n-Butyl Phthalate	
Chloroethane	Pentachlorophenol	2,4-Dinitrotoluene	
2-Chloroethylvinyl Ether	Phenol	2,6-Dinitrotoluene	
Chloroform	2,4,6-Trichlorophenol	Di-n-Octyl Phthalate	
Dichlorobromomethane	Acenaphthene	1,2-Diphenylhydrazine	

1 With the exception of wastewater samples, samples placed in an acid-preserved bottle for metals analysis must first be filtered. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

2 Samples to be analyzed for volatile organic compounds and phthalate esters shall be grab samples, the remainder shall be 24-hour composite samples.

3 The Discharger shall sample for the above listed constituents on an annual basis. Constituents not detected one year can be removed from the analytical suite the following year(s),but the entire list shall be analyzed no less than once every 5 years.

INFORMATION SHEET

ORDER NO. R5-2009-0008
HILMAR CEESE COMPANY, INC., AND
REUSE AREA OWNERS
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY

Hilmar Cheese Company, Inc. (Hilmar Cheese) is expanding its Wastewater Treatment Facility (WWTF) that serves its cheese processing plant (hereafter Plant) located north of the unincorporated community of Hilmar in Merced County. Hilmar Cheese submitted a *Report of Waste Discharge* (RWD) dated 2 June 2008 followed by an *Addendum to Report of Waste Discharge* (RWD Addendum) dated 13 November 2008. Both reports were prepared by Kennedy/Jenks Consultants on behalf of Hilmar Cheese. The RWD Addendum was submitted in anticipation of updating Waste Discharge Requirements (WDRs).

Background

WDR Order 97-206, adopted in 1997, currently regulates the discharge of cheese processing wastewater to a designated disposal area called the Primary Lands. It authorizes Hilmar Cheese to discharge a monthly average daily flow of up to 0.75 million gallons per day (mgd) and prescribes an effluent limitation for electrical conductivity at 25°C (EC) of no greater than 900 micromhos per centimeter (µmhos/cm) effective 15 March 1999.

Because of its elevated organic and salt content, the discharge to the Primary Lands created conditions of nuisance (flies and odors) and pollution in groundwater underlying the Primary Lands. In December 2004, the Executive Officer of the Central Valley Regional Water Quality Control Board (Central Valley Water Board) issued Cleanup and Abatement Order R5-2004-0772 (CAO), which directs Hilmar Cheese to abate nuisance and address groundwater impacts. On 26 January 2005, the Executive Officer issued Administrative Civil Liability Complaint R5-2005-0501, which assessed $4,000,000 in administrative civil liability for chronic violations of the effluent EC limitation. On 16 March 2006, the Central Valley Water Board adopted Order R5-2006-0025, *Ratifying the 16 March Settlement Agreement between Central Valley Water Quality Control Board and Hilmar Cheese Company, Inc., and Hilmar Whey Protein, Inc., Merced County* (hereafter Revised Settlement Agreement). The Revised Settlement Agreement and CAO required Hilmar Cheese to submit by 31 October 2006 a RWD and exercise good faith and best efforts to work with staff to draft revised waste discharge requirements for Central Valley Water Board consideration. The Revised Settlement Agreement also establishes Interim Operating Limits for the discharge. The CAO continues to regulate groundwater evaluation and cleanup work, and groundwater investigations under the CAO are ongoing.

Existing Wastewater Treatment Facility

The WWTF consists of: three subsurface collection sumps or basins; three 350,000-gallon equalization tanks with one equalization tank designated for wastewater resulting from abnormal operational conditions; two 55,000-gallon Dissolved Air Flotation (DAF) tanks; a heat exchanger; a granular sludge bed anaerobic digester; a 1,000,000-gallon pre-aeration tank; two 1,000,000-gallon sequencing batch reactors (SBRs); a 1,000,000-gallon surge tank; three DAF tanks, two with a capacity of 10,000 gallons and one with a capacity of 11,000

gallons; membrane separation using Ultrafiltration (UF); a two-stage Reverse Osmosis (RO) system; and an evaporator.

Wastewater is generated from sanitizing equipment and tanks, general facility wash down, assorted sources of equipment blow down, and truck washing. Wastewater is temporarily contained in three collection basins prior to the Plant's WWTF. A collection basin designated the "Cheese Basin" accepts wastewater from the milk receiving area, the three cheese plants, and the protein plant (about 60 percent of the discharge). Wastewater from the lactose plant is discharged to the "Lactose Basin" (about 35 percent of the discharge), and a third basin, designated the "Wastewater Basin" accepts truck wash wastewater (about 5 percent of the discharge).

Existing Discharge and Reuse Areas

The Interim Operating Limits of the Revised Settlement Agreement allow for the discharge of up to 1.2 mgd of partially treated wastewater with an EC of up to 3,700 µmhos/cm to the Primary Lands. The Interim Operating Limits also permit the discharge of no less than 0.6 mgd of UF and RO treated wastewater with a maximum EC of 900 µmhos/cm. Hilmar Cheese has been operating within those limits since adoption of the Revised Settlement Agreement in March 2006, which became effective in April of 2006.

While all of the Plant's wastewater is treated by the SBRs, not all of the flow is treated by the UF and RO units. Effluent from the SBRs is referred to as "partially-treated" wastewater while effluent from the RO units is referred to as "fully-treated" wastewater or reuse water. Hilmar Cheese disposes of partially-treated and fully-treated wastewater on nearby farm land that are divided into two reuse areas designated the "Primary Lands" and the "Secondary Lands." Hilmar Cheese owns some of the Primary Lands and leases the rest from other land owners. The Primary Lands comprise about 95 acres directly adjacent to the Plant and receive partially-treated wastewater.

The Secondary Lands receive fully-treated wastewater. Prior to discharge to the Secondary Lands, wastewater is stored in two clay-lined storage ponds with a combined capacity of approximately 44 million gallons. The Secondary Lands consist of several interconnected individual parcels generally to the west of the Plant that are owned mostly by other parties. Crops grown on the Secondary Lands are fodder crops such as sillage corn, wheat, and oats. Hilmar Cheese periodically adds or removes parcels from the Secondary Lands and notifies the Central Valley Water Board staff in writing. The Primary and Secondary Lands are collectively referred to as Reuse Areas. Hilmar Cheese owns some of the Primary Lands and leases the rest from others (Primary Land Owners). All of the Secondary Lands are owned by others (Secondary Land Owners). The Primary and Secondary Land Owners are collectively referred to as Reuse Area Owners. The parcels and Reuse Area Owners for this Order are shown in Attachment C and listed in Attachment D, which are attached hereto and made part of this Order by reference. Hilmar Cheese and the Reuse Area Owners are collectively referred to as Discharger. Hilmar Cheese is the primary discharger responsible for compliance with this Order. Each Reuse Area Owner is responsible for compliance with the

requirements of this Order concerning discharge to its respective parcels that are included within the Reuse Area.

Discharge flows to the Primary Lands decreased as Hilmar Cheese implemented improvements to the WWTF. In 2008, the monthly average flow of partially-treated wastewater to the Primary Lands to about 0.65 mgd, with an average EC of about 3,500 µmhos/cm. In 2009, the discharge of partially-treated wastewater to the Primary Lands was about 0.57 mgd, with an average EC of about 3,300 µmhos/cm.

Discharge of fully-treated wastewater to the Secondary Lands increased steadily through July 2008 to a maximum of about 1.4 mgd. The flows decreased in the second half of 2008, but were still above 1.0 mgd, which is greater than the 0.6 mgd minimum flow requirement prescribed by the Revised Settlement Agreement. Hilmar Cheese has indicated the decrease occurred as it was pushing the operation limits of the WWTF through the summer to assess its treatment potential and help design the proposed expansion.

Data from Hilmar Cheese's self-monitoring reports indicates that the wastewater applied to the Primary Lands from April 2006 through 2008 had the following average characteristics.

Primary Lands Effluent Data

Flow (mgd[1])	BOD[2] (mg/L[3])	Total N[4] (mg/L)	TDS[5] (mg/L)	EC[6] (µmhos/cm[7])	Cl[8] (mg/L)	Na[9] (mg/L)
0.73	362	187	2,217	3,532	327	631

1. million gallons per day (mgd)
2. 5-day biochemical oxygen demand (BOD)
3. milligrams per liter (mg/L)
4. Total nitrogen (Total N) equals TKN + Nitrate, as N.
5. Total Dissolved Solids
6. Electrical Conductivity (EC)
7. Micromhos per centimeter (µmhos/cm)
8. Chloride (Cl)
9. Sodium (Na)

In 2009, the wastewater applied to the Primary Lands had the following average characteristics.

2009 Primary Lands Effluent Data

Flow (mgd)	BOD (mg/L)	Total N (mg/L)	TDS (mg/L	EC (µmhos/cm)	Cl (mg/L)	Na (mg/L)
0.57	119	68	2,112	3,334	391	621

Data from Hilmar Cheese's self-monitoring reports indicates that the wastewater applied to the Secondary Lands in from April 2006 through 2009 had the following average characteristics.

Secondary Lands Effluent Data

Flow (mgd[1])	BOD[2] (mg/L[3])	Total N[4] (mg/L)	TDS[5] (mg/L)	EC[6] (µmhos/cm[7])	Cl[8] (mg/L)	Na[9] (mg/L)
1.06	42	18	452	817	68	145

1. million gallons per day (mgd)
2. 5-day biochemical oxygen demand (BOD)
3. milligrams per liter (mg/L)
4. Total nitrogen (Total N) equals TKN + Nitrate, as N
5. Total Dissolved Solids
6. Electrical Conductivity (EC)
7. Micromhos per centimeter (µmhos/cm)
8. Chloride (Cl)
9. Sodium (Na)

From April 2006 through 2009, the full treatment system removed about 88 percent of BOD, 79 percent of total dissolved solids (TDS), 80 percent of chloride, 78 percent of sodium, and reduced EC by 77 percent.

Hydrogeology/Groundwater Conditions

The Plant is located within the Turlock groundwater subbasin that forms a part of the San Joaquin Valley Groundwater Basin. The region is reported to contain three primary water bearing zones: an uppermost unconfined aquifer (Modesto Formation) from about 0 to 125 feet bgs; a semi-confined aquifer (Turlock Lake Formation) from about 125 to 200 feet bgs; and a confined aquifer that is beneath the Corcoran Clay layer at depths from about 200 to 250 feet bgs.

The direction of groundwater flow in the unconfined aquifer is generally to the west/southwest, but the direction is influenced by the discharge of wastewater and irrigation water, as well as by the operation of nearby pumping of wells, including wells that discharge shallow groundwater from area tile drainage networks to surface canals. The overall direction of the flow is to the southwest. The depth to first-encountered groundwater is shallow ranging from about 5 to 15 feet bgs.

Groundwater quality in the Hilmar area is highly variable and, in general, the concentration of mineral constituents increases from east (upgradient) to the west (downgradient). It is typical for groundwater quality to decrease along the axis of its flow as it moves downgradient. The water quality appears to have been impacted by past and current land uses (the Plant and its discharges, dairies, farming, industry, etc) and irrigation with water of varying quality.

Groundwater investigations have assessed groundwater quality to about 200 feet bgs both upgradient and downgradient of the Plant. As would be expected, the greatest impact is observed in the unconfined aquifer in the vicinity of the Primary Lands. Groundwater containing TDS concentrations greater 1,000 milligrams per liter (mg/L) extends about one

mile from Lander Avenue of the east to nearly Columbus Avenue to the west and is about one-half a mile wide extending from south of August Avenue to a concrete-lined canal called TID Lateral No. 6, which runs generally east-west along the northern edge of the Primary Lands. The maximum TDS concentration recorded was 2,700 mg/L (which corresponds to an EC of about 3,800 µmhos/cm). TDS concentrations in the semi-confined and confined aquifers were significantly lower with concentrations ranging from about 260 to 1,000 mg/L. While some impact has occurred, the existing aquitards have limited the amount of downward movement of the salts.

In an effort to establish water quality conditions upgradient (east) of the Plant, James & Associates, Inc. (Jacobson James) collected groundwater samples over the last several years from 11 direct push technology borings and a monitoring well to provide preliminary data for the evaluation of ambient conditions in the Upper Aquifer (above the Corcoran Clay) upgradient (east) of the Plant. The results were presented in a 23 June 2008 *Determination of Ambient TDS Concentrations for the Upper* Aquifer prepared by Jacobson James. Two of the wells sampled appear to have been influenced by discharge of waste by Hilmar Cheese on its Primary Lands. Removing data from these two wells from the data set, the following values characterize upgradient groundwater quality to a 95% confidence level for several constituents of concern.

Upgradient Groundwater Quality

TDS[1] (mg/L[2])	EC[3] (µmhos/cm[4])	NO_3 as N[5] (mg/L)	Cl[6] (mg/L)	Na[7] (mg/L)
570	847	18	54	76

1. Total Dissolved Solids (TDS)
2. Milligrams per liter (mg/L)
3. Electrical Conductivity (EC)
4. Micromhos per centimeter (µmhos/cm)
5. Nitrate as nitrogen (NO_3 as N)
6. Chloride (Cl)
7. Sodium (Na)

Most of the constituents are within water quality objectives with the exception of nitrate. Elevated nitrate concentrations are a regional concern and are likely due to impacts from local agricultural land uses such as nearby dairies and farmland including almond orchards.

Hilmar Cheese has an existing groundwater monitoring network consisting of 23 groundwater monitoring wells and more wells are planned both upgradient and downgradient of the Plant. Most of these wells are in the vicinity of the Primary Lands and have been impacted by discharge from Hilmar Cheese or nearby properties. Additional wells are planned to monitor new Secondary Lands that will be used for discharge.

Compliance History

Since the Interim Operating limits were issued in 2006, Hilmar Cheese has been generally in compliance with the numerical effluent limits. There were no effluent limits exceeded in

discharge to the Primary Lands, and one exceedance of the 900 µmhos/cm EC limit for the Secondary Lands. Hilmar Cheese typically submits timely and complete self-monitoring reports.

The Revised Settlement Agreement required Hilmar Cheese to submit a RWD by 31 October 2006. Hilmar Cheese submitted a RWD in October 2006, but needed additional time to complete the evaluation of WWTF improvements and groundwater investigations required by the CAO. Hilmar Cheese submitted two additional RWDs in Month 2007 and June 2008 and an RWD addendum in November 2008 (November 2008 Addendum).

The November 2008 Addendum updates the June 2008 RWD, proposes a time schedule to further treat wastewater discharged to nearby farmland, and identifies Hilmar Cheese's objectives as: (1) to implement improvements to the onsite treatment system; (2) identify and obtain additional acreage needed for disposal of fully-treated wastewater (a.k.a WWTF effluent or reuse water); and (3) to develop a long-term wastewater management system. The November 2008 Addendum evaluates irrigation practices to protect groundwater quality and includes a model to evaluate potential downgradient impacts. It indicated improvements to the WWTF would be complete by December 2009, allowing Hilmar Cheese to treat all its wastewater to the levels now in place for discharge to the Secondary Lands (e.g., discharge EC not to exceed 900 µmhos/cm).

No odor or vector complaints were received by Central Valley Water Board staff regarding the discharge of the fully-treated wastewater to the Secondary Lands. However, discharge of the partially-treated wastewater to the Primary Lands caused or threatened nuisance conditions on several occasions in 2008. Complaints were received from several nearby residents, mostly about odors, but some about the generation of flies and the dissatisfaction with water quality in the area. The complaints resulted in four inspections by staff and the issuance of three notices of violation (NOVs) for creating nuisance conditions at the reuse area that could be detected outside Hilmar Cheese's property boundaries.

Upon the completion of the WWTF Expansion Project, all wastewater will be subjected to full treatment and discharged to clay-lined ponds then to Secondary Lands parcels to irrigate fodder crops; the discharge of all wastewaters to the Primary Lands will cease, thereby eliminating conditions that caused or threatened nuisance conditions.

In July 2009, Hilmar Cheese reported that costs associated with the UF and RO units may not be sustainable and that it was evaluating a new salinity-removal technology, Electrodialysis Reversal (EDR), an electrochemical separation process that removes ions and other charged species from water and other fluids. Hilmar Cheese reported the EDR system may function more effectively than UF/RO treatment and its associated costs in labor, maintenance, and equipment would be considerably less. EDR treatment technology has been successfully employed to treat brackish water for use as drinking water, but has not been tested on industrial wastes such as those from a cheese processing plant.

Hilmar Cheese indicated it would need until May 2010 to complete a testing program to evaluate the EDR technology. If testing indicates EDR is effective, Hilmar Cheese proposed a date of July 2011 to have the equipment installed and operating. Should testing indicate EDR is not applicable, the previously proposed UF/RO system would be in place by February 2011.

The average discharge flow rate to the Primary Lands since 2006 has been about 0.73 mgd. In 2008, the average flow was about 0.65 mgd. Even with flows considerably less than the 1.2 mgd limit in the Interim Operating Limits, Central Valley Water Board staff received numerous complaints from nearby residents in 2008 and issued three NOVs because of standing wastewater that had caused or threatened to cause objectionable odors and potential nuisance conditions.

Because Hilmar Cheese will not comply with the effluent limitations of the proposed Order, an accompanying draft Time Schedule Order provides a time schedule for Hilmar Cheese to complete the Expansion Project. The Time Schedule Order includes a flow limitation that requires Hilmar Cheese to limit flows to whatever is necessary to preclude wastewater from standing in the Reuse Area for greater than 48 hours and to preclude the creation of nuisance conditions. The Time Schedule Order also limits EC to 3,600 µmhos/cm.

Basin Plan, Beneficial Uses, and Regulatory Considerations

One of the greatest long-term problems facing California's groundwater is increasing salinity. The Tulare Lake Basin Plan's salt management requirements have been successfully implemented for several decades. Widespread and long-term compliance with these requirements justify them as appropriate best practicable treatment and control measures for salinity applicable to discharges in the Sacramento River and San Joaquin River Basins. The Regional Board encourages proactive management of waste streams by dischargers to control addition of salt through use. More restrictive limitations on salt constituents added through use is appropriate where necessary to assure compliance with a groundwater limitation for any constituent established by the Regional Water Board.

Antidegradation

State Water Resources Control Board Resolution No. 68-16 (hereafter Resolution 68-16) requires the Regional Water Board to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in State and Regional Water Board policies (e.g., quality that exceeds water quality objectives).

The current WDRs considered Resolution 68-16 and found that some degradation by typical waste constituents was in the best interest of the people of the State. The WDRs also included an effluent limitation for EC of 900 umhos/cm to ensure the discharge did not result in water quality less than prescribed in the Basin Plan. Constituents of concern that have the potential to cause degradation include EC, TDS, total nitrogen, sodium, and chloride.

The average EC concentration in effluent discharged to the Secondary Lands in 2007 and 2008 was 818 umhos/cm, which is slightly lower than the EC of ambient groundwater. The TDS concentration in effluent discharged to the Secondary Lands was about 455 mg/L in 2007 and 2008, which is similar to and slightly lower than background groundwater quality. Because Hilmar Cheese is treating wastewater to reduce salinity to levels below ambient water quality, it would appear no degradation will occur. However, increases in concentration due to evaporation and evapotranspiration could contribute to groundwater degradation. Such degradation would be equivalent to what would occur from the use of groundwater for irrigation and would be within existing water quality objectives.

Hilmar Cheese's consultant, Kennedy/Jenks, prepared a technical report to estimate the potential degradation to groundwater from the discharge and the amount of land needed for disposal. The report's model indicated that up to 1,200 acres will be required. The model predicted the concentration of TDS in the vicinity of the proposed Secondary Lands would be approximately 700 mg/L, with or without the discharge. This value (700 mg/L) is the predicted value for ambient water quality in the vicinity of the proposed Secondary Lands. The conclusion of the report was that there would be no degradation from the discharge as it is of comparable quality to existing downgradient water quality. The model considered a combination of precipitation, Turlock Irrigation District water used for irrigation in the area, irrigation with wastewater from local dairies, and discharge of Hilmar Cheese's treated wastewater.

Regionally, nitrogen concentrations in groundwater in the Hilmar area are highly variable and likely influenced by agricultural land uses (e.g., dairies and irrigated agriculture). Historically, total nitrogen in the discharge to the Primary Lands degraded groundwater to the point of affecting beneficial use for drinking water. However, total nitrogen concentrations in the fully-treated effluent discharged to the Secondary Lands is equal to or lower than that of upgradient water quality. The average total nitrogen concentration in the effluent discharged to the Secondary Lands in 2008 was 14 mg/L. Jacobson-James reported the ambient total nitrogen concentrations upgradient of the Plant was about 27 mg/L, greater than the concentration in the treated effluent. Well MW-21 was installed upgradient and offsite to the northeast in April 2008 and total nitrogen has ranged between 34 and 64 mg/L. Almond orchards are present just upgradient of well MW-21 and likely contribute to the higher concentrations observed in well MW-21.

The ponds used to store treated effluent are clay-lined and the effluent is used to irrigate crops that use the available nitrogen. Application of the wastewater at agronomic rates of irrigation will allow crop uptake of the majority of the nitrogen in wastewater and reduce the amount reaching groundwater in the Reuse Areas. The amount of nitrogen reaching groundwater through the clay-lined storage ponds will be minimal. Therefore the discharge would not cause degradation of groundwater above background, nor above the MCL for nitrate.

Sodium concentrations in effluent discharged to the Secondary Lands averaged about 145 mg/L since April 2006. Sodium in groundwater beneath the Secondary Lands and downgradient typically exceeds the ambient concentration and exceeds Agricultural Water Quality Objectives for salt sensitive plants (i.e. 69 mg/L). Sodium concentrations in MW-11 and MW-17 have averaged about 115 mg/L. Sodium concentrations in MW-21, a well upgradient of the Plant, are about 42 mg/L. Compared to the sodium concentrations in either MW-11 or MW-21, the effluent has the potential to degrade groundwater.

Ayers and Westcott (Ayers and Westcott, Water Quality for Agriculture) indicate sodium concentrations up to 70 mg/L have no restrictions for salt-sensitive crops and concentrations from 70 to 210 mg/L have only slight to moderate restrictions for sprinkler irrigation. Crops are typically flood irrigated or drip system irrigated in the Hilmar area. Land use surveys for the Hilmar area by DWR indicate salt sensitive crops irrigated by sprinklers are not grown in the area.

Based on all of the above, the existing effluent sodium concentrations will not limit the use of the groundwater in the Hilmar area. Based on the current and historical crops grown in the area, the types of soils in the area, irrigation practices, and reference material by Westcott and Ayers, the effluent will be within the range that would have only slight moderate restrictions for sprinkler application to salt sensitive crops (typically not grown in the area).

Chloride concentrations in the fully-treated effluent discharged to the Secondary Lands averaged about 62 mg/L in 2007 and 2008. Ambient chloride concentrations in groundwater appear to be about 40 mg/L, so some degradation will occur. However, the Secondary MCL for chloride is 250 mg/L and the lowest typical agricultural limit for chloride is 106 mg/L. Both limits are well above the chloride concentration of the fully-treated effluent, so while some degradation will occur, it will be within applicable water quality objectives.

Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore sufficient reason exists to accommodate growth and limited groundwater degradation around the Plant, provided that the terms of the Basin Plan are met. Degradation of groundwater quality by some of the typical waste constituents released with discharge from a food processing wastewater treatment plant after effective source reduction, treatment and control, and considering the best efforts of Hilmar Cheese and magnitude of degradation, is of maximum benefit to the people of the State. Hilmar Cheese contributes to the economic prosperity of the region by directly employing over 700 workers, provides incomes for numerous surrounding dairies, and provides a tax base for local and county governments. The proposed Order requires treatment that constitutes best practicable treatment or control.

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 extensive 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.

Unless exempt, release of designated waste is subject to full containment pursuant to Title 27 requirements. Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards and other Title 27 requirements provided the following conditions are met:

a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;
b. The discharge is in compliance with the applicable basin plan; and
c. The waste is not hazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

The discharge of effluent and the operation of treatment or storage facilities associated with a food processing facility is exempt from Title 27, provided any resulting degradation of groundwater is in accordance with the Basin Plan and the waste need not be managed as a hazardous waste. None of the waste regulated by the proposed Order is hazardous waste nor required to be treated as hazardous waste. With treatment to remove organics and salinity, lined storage ponds, and application at agronomic rates, the discharge authorized by the proposed WDRs will not cause exceedance of groundwater quality objectives and complies with the Antidegradation Policy and is therefore exempt from Title 27. In addition, effluent applied to Secondary Lands is a reuse that is exempt under Title 27, Section 20090(h).

CEQA

On 2 January 2009, Merced County, as Lead Agency, circulated a draft Mitigated Negative Declaration for the proposed expansion of the Plant. Central Valley Water Board staff reviewed and commented on the draft Mitigated Negative Declaration. On 11 February 2009, the Merced County Planning Commission adopted the Mitigated Negative declaration. Mitigation measures include a condition that restricts discharge flows to current levels until Hilmar Cheese completes the WWTF Expansion Project, treats all cheese processing wastewater flows for salinity reduction, and prepares and implements a Nutrient Management Plan.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order prohibits discharge to surface waters and water drainage courses.

The proposed Order would maintain the flow limit at 1.9 mgd, until the expansion activities are complete and Hilmar Cheese is compliant with the effluent limits.

The proposed Order would require that the discharge from the WWTF to the effluent storage ponds not exceed the following monthly averages for the constituents listed:

Constituent/Parameter	Units	Value
Electrical Conductivity	µmhos/cm[1]	1,000
Total Dissolved Solids	mg/L[2]	600
5-day Biochemical Oxygen Demand	mg/L[2]	50
Chloride	mg/L[2]	85
Total Nitrogen	mg/L[2]	20

1. micromhos per centimeter (µmhos/cm)
2. milligrams per liter (mg/L)

The proposed Order would require that the discharge from the WWTF to the effluent storage ponds not exceed the following 12-month rolling average for the constituents listed:

Constituent/ Parameter	Units	Value
Electrical Conductivity	µmhos/cm	900
Total Dissolved Solids	mg/L	500

The discharge requirements regarding dissolved oxygen, pH, and freeboard are consistent with Regional Water Board policy for the prevention of nuisance conditions, and are applied to all such facilities.

The proposed WDRs would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedance of these objectives or background water quality, whichever is greater. The groundwater limits reflect current information and what is expected to be achievable by implementing BPTC. The limits may be revisited once additional wells in the Secondary Lands are installed and more information on groundwater quality is available.

General WDRs Order R5-2007-0035, *General Order for Existing Milk Cow Dairies* (General Order) requires dairy waste that is blended with waste generated off-site be regulated by a separate order. The proposed Order authorizes Plant effluent and dairy wastewater to be applied to Secondary Lands, providing the Discharger accounts for both in its loading calculations and the facility meets the requirements for nutrient management plans, monitoring and reporting, and runoff contained in the General Order.

Monitoring Requirements
Section 13267 of the CWC authorizes the Regional Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years there has been an increased emphasis on obtaining all necessary

separate order. The proposed Order authorizes Plant effluent and dairy wastewater to be applied to Secondary Lands, providing the Discharger accounts for both in its loading calculations and the facility meets the requirements for nutrient management plans, monitoring and reporting, and runoff contained in the General Order.

Monitoring Requirements

Section 13267 of the CWC authorizes the Regional Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years there has been an increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes effluent, groundwater, pond, soil, and water supply monitoring. The monitoring is necessary to evaluate the extent of the potential degradation from the discharge.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.

JSP/DKP: 01/29/10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

TIME SCHEDULE ORDER NO. R5-2010-0009

REQUIRING
HILMAR CHEESE COMPANY, INC.
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY
TO COMPLY WITH REQUIREMENTS PRESCRIBED IN ORDER NO. R5-2010-0008

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

1. On 29 January 2010, the Central Valley Water Board adopted Waste Discharge Requirements (WDR) Order R5-2010-0008 prescribing waste discharge requirements for Hilmar Cheese Company, Inc. (hereafter Discharger) at its Cheese Processing Plant's wastewater treatment facility (WWTF), Merced County. The Discharger discharges wastewater to two Reuse Areas known as the Primary and Secondary Lands as described in Order R5-2010-0008.

2. The Central Valley Water Board issued Cleanup and Abatement Order R5-2004-0772 (CAO) in December 2004 due to nuisance conditions and impacts to groundwater from the Discharger's disposal of wastewater to land. The CAO directs the Discharger to abate nuisance and address impacts to groundwater caused by its discharge in violation of Order 97-206. Work to address the tasks of the CAO is ongoing.

3. On 26 January 2005, the Executive Officer issued Administrative Civil Liability Complaint R5-2005-0501 to the Discharger in the amount of $4,000,000 for chronic violations of the effluent electrical conductivity (EC) limitation prescribed in Order 97-206. On 16 March 2006, the Central Valley Water Board adopted Order R5-2006-0025, which ratified a Revised Settlement Agreement with the Discharger. Order R5-2006-0025 settled Administrative Civil Liability Complaint R5-2005-0501; required the Discharger to submit a Report of Waste Discharge (RWD) by 31 October 2006; and prescribed Interim Operating Limits for discharge flow and effluent EC that would be in effect until the Central Valley Water Board issued revised waste discharge requirements for the discharge.

4. The Revised Settlement Agreement required the Discharger to assess the impact to groundwater and submit an RWD by October 2006. The Revised Settlement Agreement included Interim Operating Limits (Order R5-2006-0025) that prescribed discharge requirements until the Discharger could complete improvements to the WWTF. The Discharger has been operating within those limits since adoption of the Revised Settlement Agreement in March 2006, which became effective in April 2006. The Interim Operating Limits allow for the discharge of up to 1.2 million gallons per day (mgd) of partially-treated wastewater with an EC of up to 3,700 micromhos per centimeter (µmhos/cm) to the Primary Lands. In 2008, the monthly average flow of partially-treated wastewater to the Primary Lands was about 0.65 mgd, with an average EC of about 3,500 µmhos/cm. In 2009 (through November 2009), the discharge of partially-treated wastewater to the Primary Lands was about 0.60 mgd, with an average EC of about 3,300 µmhos/cm.

5. The Discharger submitted a RWD in 2006, but also indicated that it needed additional time to complete its evaluation of WWTF improvements and effluent disposal options. Central Valley Water Board staff concurred with the Discharger's determination that additional time was necessary to allow it to submit an RWD of sufficient detail for staff to prepared revised WDRs. The Discharger submitted two additional RWDs in November 2007 and June 2008, followed by an *Addendum to Report of Waste Discharge* (Addendum) dated 13 November 2008 prepared by Kennedy/Jenks Consultants.

6. The Addendum proposed to increase the discharge flow from 1.9 to 2.5 mgd; to fully treat all the Plant's cheese processing wastewater flow by December 2009; and provide reuse water for use as an irrigation supply to owners of about 1,200 acres of agricultural land situated generally west/northwest of the Plant. In July 2009, the Discharger reported that costs associated with ultrafiltration (UF) and reverse osmosis (RO) units may not be sustainable and that it was evaluating a new salinity-removal technology, Electrodialysis Reversal (EDR), an electrochemical separation process that removes ions and other charged species from water and other fluids. The Discharger indicated the EDR system could potentially function more effectively than UF/RO treatment and its associated costs in labor, chemicals, maintenance, and equipment would be considerably less. EDR treatment technology has been successfully employed to treat brackish water for use as drinking water, but has not been tested on industrial wastes such as from a cheese processing plant.

7. The Discharger indicated it would need until 1 May 2010 to complete a testing program to evaluate the EDR technology. If testing indicates EDR is effective, the Discharger proposed a date of 15 July 2011 to have the equipment installed and operating. Should testing indicate EDR is not applicable, the previously proposed UF/RO system would be in place by 15 February 2011.

8. The average discharge flow rate to the Primary Lands from April 2006 through 2008 was about 0.73 mgd. In 2008, the average flow was about 0.65 mgd. Even with flows considerably less than the 1.2 mgd limit in the Interim Operating Limits, Central Valley Water Board staff received complaints from nearby residents in 2008 and issued three NOVs because of standing wastewater that had caused or threatened to cause objectionable odors and potential nuisance conditions. In the latter part of 2009, the Discharger modified the means for discharge to the Primary Lands in an effort to further reduce the potential for objectionable odors and potential nuisance conditions.

9. WDR Order No. R5-2010-0008 contains Effluent Limitations B.1 and B.2, which reads:

   1. The discharge shall not exceed the following monthly averages for the constituents listed:

Parameter	Effluent Limit[1]
Electrical Conductivity (EC)	1,000 umhos/cm
Total Dissolved Solids (TDS)	600 mg/L
5-Day Biochemical Oxygen Demand (BOD)	50 mg/L
Chloride	85 mg/L
Total Nitrogen (TKN + NO_3 as N)	20 mg/L

1. Micromhos/centimeter (umhos/cm), milligrams per liter (mg/L), million gallons per day (mgd).

   2. The discharge from the WWTF to the effluent storage ponds shall not exceed the following 12-month rolling average for the constituents listed:

Parameter	Effluent Limit[1]
Electrical Conductivity (EC)	900 µmhos/cm
Total Dissolved Solids (TDS)	500 mg/L

10. Immediate compliance with Effluent Limitation B.1 for the portion of flow currently discharged to the primary lands is not practicable. The California Water Code authorizes time schedules for achieving compliance.

11. California Water Code (CWC) section 13300 states: *"Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements."*

12. In accordance with CWC section 13300, the Central Valley Water Board finds that there is a discharge of waste threatening to take place that will violate requirements prescribed by the Central Valley Water Board, and that the Discharger may not be able to immediately comply with Effluent Limitation B.1 on the Primary Lands for EC, TDS, BOD, chloride, and total nitrogen. Therefore, the Central Valley Water Board finds that a Time Schedule Order is appropriate.

13. CWC Section 13267(b) states that: "In conducting an investigation specified in subdivision (a), the Central Valley Water Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Central Valley

Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Central Valley Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

14. The technical reports required by this Order are necessary to assure compliance with the Order and applicable provisions of the California Water Code. The Discharger operates the facility that discharges the waste subject to this Order.

15. On 29 January 2010, in Sacramento, California, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing at which evidence was received to consider a Time Schedule Order under CWC section 13300 to establish a time schedule to achieve compliance with waste discharge requirements.

16. The issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) because it is an enforcement order exempted under 15321(a)(2), Title 14, California Code of Regulations. This Order is also exempt under Section 15061(b)(3) because it implements the Effluent Limitations imposed by another Order, and because it will result in improvement of the quality of ongoing discharges that are part of the CEQA "baseline."

17. Any person adversely affected by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action. The petition must be received by the State Water Board Office of the Chief Counsel, P.O. Box 100, Sacramento, California 95812-0100, within 30 days of the date on which the action was taken. Copies of the law and regulations applicable to filing petitions may be found on the Internet at www.waterboards.ca.gov/centralvalley or will be provided upon request.

IT IS HEREBY ORDERED that, pursuant to sections 13300 and 13267 of the California Water Code, Hilmar Cheese Company, Inc. and its agents, successors, and assigns, shall comply with the following:

1. The Discharger shall comply with the following time schedule to ensure compliance with Effluent Limitation B.1 on the Primary Lands contained in WDR Order No. R5-2010-0008 as described in the above findings.

Task	Date Due
Submit a Work Plan indicating what treatment system will be used to treat wastewater to the numerical limits listed in Effluent Limitation B.1.	**15 May 2010**
Submit progress reports[1]	**Quarterly**, from **15 July 2010** until final compliance
Full Compliance if UF/RO technology is implemented[2]	**15 February 2011**
Full Compliance if anything other than UF/RO technology is implemented[2]	**15 July 2011**

1 The progress reports shall report the monthly average flow volume discharged to the Primary Lands and detail what steps have been implemented towards completing the expansion project, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to cease discharge of partially-treated wastewater to the Primary Lands.

2 Full compliance shall be demonstrated by ceasing the discharge of partially treated wastewater to the Primary Lands by the final compliance date.

2. The following interim effluent limitations for discharge to the Primary Lands, as defined in Order R5-2010-0008, shall be effective immediately:
   a. The discharge flow shall be limited to whatever is necessary to preclude wastewater from standing in the Reuse Area for greater than 48 hours and to preclude the creation of nuisance conditions.
   b. The monthly average discharge flow shall not exceed 0.500 mgd.
   c. The monthly average EC of the discharge shall not exceed 3,600 µmhos/cm.
   d. The 12-month rolling average EC of the discharge shall not exceed 3,400 µmhos/cm.
3. If, in the opinion of the Executive Officer, the Discharger violates this Order, the Executive Officer may refer the matter to the Attorney General for judicial enforcement or alternately issue a formal complaint for Administrative Civil Liability

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 January 2010.

for PAMELA C. CREEDON, Executive Officer

JSP/DKP: 01/29/10