Mail Code WTR-9

Burton Fleischer, R.E.A., R.E.P.
Director, Environmental Affairs
Hilmar Cheese Company
9001 North Lander Avenue
P.O. Box 910
Hilmar, CA 95324

Re: Minor Permit Modification
Permit No. CA10500001
Merced County, CA

Dear Mr. Fleischer:

Enclosed is a Minor Modification to Permit No. CA10500001, issued to Hilmar Cheese Company for operation of several Class I-NH injection wells. This minor permit modification is issued in accordance with UIC regulations at 40 CFR §144.41. The permit modification is effective immediately.

Note especially the modified requirements regarding operating conditions stipulated in Part II.C.5 and C.6. The maximum allowable injection pressure of nine hundred and nineteen (919) psig and an associated maximum allowable injection rate of twenty-three million (23,000,000) gallons per month or seven hundred and sixty-eight thousand (768,000) gallons per day, based on step-rate test results conducted on October 3, 2006 and as approved on December 20, 2006, are now included in the permit. In addition, other clarifications requested by Hilmar and approved by EPA are now incorporated into the permit. These include revisions to the name, location, and specifications for well WD-1, now referred to in the permit as WD-1P.

If you have any questions regarding the permit conditions or fall-off testing requirements, please call Dave Basinger at (415) 972-3506, or email: basinger.david@epa.gov

Sincerely,

David Albright,
Manager, Ground Water Office
Date__[original signed May 22, 2008]

Enclosures: Minor Modification, with Appendix A inserts: WD-1P Proposed Well Bore Diagram, Figure 1 (WD-1P location), Figure 2, (WD-1P location)

MINOR MODIFICATION TO PERMIT NO. CA10500001
ISSUED TO HILMAR CHEESE COMPANY

In accordance with 40 CFR '144.41, it is understood and agreed that this permit has been modified to establish a maximum allowable injection pressure (MAIP) as well as a maximum allowable injection rate (MAIR), based on results of a step-rate test conducted on October 3, 2006. In addition, several clarifications to existing permit terms are included, based on communications with Hilmar.

Portions of pages 1, 2, 5, 6, 8, 9, 10, 12, 13, and Appendix A of the permit have been revised to incorporate the above changes and now read as follows (for clarity, changes are shown with removals struck out and with new additions **emboldened and underlined**):

Cover page:

Well Names: WD-1**P**, WD-2, WD-3, and WD-4

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A. WELL CONSTRUCTION

. . .

3. Proposed Location of Injection Wells WD-1**P**, WD-2, WD-3, and WD-4……6

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PART II. SPECIFIC PERMIT CONDITIONS

A. WELL CONSTRUCTION

1. Requirement for Written Permission to Construct

(a) No drilling or construction activities ~~of Injection Wells WD-1, WD-2, WD-3, or WD-4~~ **for any injection wells subject to this permit** may commence without adherence to the conditions in this section and written permitssion from the EPA Region IX Water Division Director (Director).

(b) ~~Well WD-1 must be constructed first, and meet a~~ **A**ll conditions of Part II, Section C **must be met for any permitted well(s)** prior to the Permittee receiving approval to construct **that well** ~~Wells WD-1, WD-2, WD-3, and WD-4~~.

2. Casing and Cementing

The Well Construction Plans submitted with the permit application are hereby incorporated into this permit as Appendix A, and shall be binding on the Permittee. Notwithstanding any other provisions of this permit, the Permittee shall case and cement the wells to prevent the movement of fluids into or above underground sources of drinking water (USDW). **"USDW" is defined by 40 CFR §144.3.** The following approximate specifications apply to the proposed injection wells:

(a) Injection Wells WD-1**P**, WD-2, WD-3, and WD-4**:**

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(i) Proposed modifications for Injection Well WD-1P:

Conductor Pipe: 10-3/4 in. OD (40.5lb J-55)

Tubing: 5-1/2 in. OD (17lb L-80) with 5-1/2 in. OD (17lb L-80) slotted liner

(b) Permittee must submit a final well construction diagram to EPA within 30 days of the completion of **any permitted injection well** ~~Injection Wells WD-1, WD-2, WD-3, and WD-4~~.

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3. Proposed Location of Injection Wells WD-1**P**, WD-2, WD-3 and WD-4

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(a) The proposed WD-1P location is found in Appendix A, Figures 1 and 2.

4. Tubing, Liner Hanger, and Monitoring Equipment Specifications

Injection will take place through the tubing strings.

Wells WD-1**P**, WD-2, WD-3, WD-4:

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5. Injection Intervals

Injection will be permitted for the undifferentiated Paleocene through Upper Cretaceous sands formation, which is expected to occur at depths corresponding to the perforation depths assigned to wells WD-1**P**, WD-2, WD-3, and WD-4 (approximately 3350 ft. to 4150 ft. bgs). Minor alterations of the depths of injection zone intervals and therefore, the casing setting depths for WD-1**P**, WD-2, WD-3, and WD-4 are expected to be realized upon drilling. These alterations and other rework operations that may occur later in the course of operation of the wells must be properly reported (EPA Form 7520-12), and the Permittee must demonstrate that each well has mechanical integrity in accordance with Part II, Section C.3 before any injection is authorized.

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C. WELL OPERATION

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2. Prior to Receiving Authorization to Inject

Injection operations **for any permitted well** may not commence until construction **for that well** is complete, **and** the Permittee has complied with items (a), (b), (c), (d), (e), (f), and (g) ~~as follows:~~ **of this section, and an Authorization to Inject has been issued for that well by the Director.**

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(b) Step-Rate Testing and Injection Pressure Limitation

(i) A step-rate test will be conducted on ~~Well WD-1~~ **the first well constructed under this permit** to determine the formation fracture pressure and the fracture gradient **which will apply to all permitted wells**. In addition, similar tests may be required ~~in wells WD-2, WD-3, and WD-4~~ **for any additional wells constructed under the permit,** at the discretion of the Director.

(ii) The injection pressure limitation will be established ~~in accordance with~~ **under** Part II, Section C.5 of this permit.

(c) Injection Zone Parameter Testing

(i) Well logs and tests to determine the porosity, permeability, static formation pressure, and effective thickness of the injection zone shall be run on ~~Well WD-1 on~~ **the first well constructed under the permit** by the Permittee and copies of logs and test results will be provided to EPA. In addition, similar logs and tests

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may be required ~~in wells WD-2, WD-3, and WD-4~~ **for any additional wells constructed under the permit**, at the discretion of the Director.

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(e) Notice of Well Construction Completion

The Permittee must submit notice of completion of construction **for each permitted well** to the Director (see EPA Form 7520-9 in Appendix B). ~~After final construction of the wells, injection may not commence until the Director has inspected or otherwise reviewed the injection wells and notified the Permittee that it is in compliance with the conditions of the permit.~~ **Injection for that well may not commence until the Director has issued an Authorization to Inject.**

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3. Mechanical Integrity

(a) Methods for Demonstrating Mechanical Integrity

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(iv) Cement evaluation tool analysis:
A spherically-focused cement evaluation tool analysis and a cement bond log shall be conducted for any well constructed under this permit.

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5. Injection Pressure Limitation

(a) Injection pressure measured at the wellhead **(detailed in Appendix A)** shall be based on the step-rate test conducted under item 1(a) of this section. The Director will provide the Permittee written notification of the maximum allowable injection pressure

for each injection well constructed and operated under this permit. In no case shall pressure in the injection zone during injection initiate new fractures or propagate existing fractures in the injection zone or the confining zone. In no case shall injection pressure cause the movement of injection or formation fluids into an underground source of drinking water.

(i) As determined by the step-rate test conducted under item 2(b) of this section, injection pressure measured at any permitted wellhead shall not exceed 919 pounds per square inch gauge (psig).

(b) A pressure falloff test shall be conducted annually, unless other information demonstrates the need for additional tests and/or an increased frequency of tests. The Permittee must submit a proposal for pressure falloff test procedures at least sixty (60) days before the planned test and must receive EPA approval prior to the test. The proposed procedures must generally conform to EPA regional guidance for conducting pressure falloff tests but must be adapted for the specific conditions at this facility. Appendix D contains examples of EPA regional guidance.

The report of the FOT results should include a revised calculation of the Zone of Endangering Influence (ZEI) and a thorough evaluation (with supporting calculations) that details the anticipated effects of injection activities allowed under the permit on any abandoned wells that fall within the Area of Review in the permit application. These wells include, but are not limited to, "Amerada Hess Corporation Lundquist Unit 1", "Atlantic Oil Company Hilmar 1", "C.F. Braun & Co. C.B. Young 1", "Hilliard Oil & Gas, Inc. Deus 1", and "Schusterman Operating Co. Inexco-Nyman Unit 1".

EPA will review the annual FOT report submitted by the Permittee to determine if any corrective action under Part II.B of the permit is required. If deemed necessary to protect USDWs, the Permittee may be notified that the injection rate must be reduced or injection ceased in order to protect USDWs or to address any potentially required corrective action (e.g. re-entering and plugging an abandoned exploratory oil well).

6. Injection Rate Limitation

(a) The injection rate shall not exceed the volume determined appropriate through the demonstrations conducted in this section. The Director will provide written notification of the maximum injection volume allowed under this permit prior to any injection activities.

(i) The injection rate for any individual permitted well shall not exceed twenty-three (**23) million gallons per month or seven hundred sixty-eight thousand (768,000) gallons per day at any time, based on the step-rate test conducted under item 2(b) of this section. The injection rate may be reduced based on the annual review of the FOT results completed under item 5(b) of this section.**

(b) The Permittee may request an increase in the maximum rate allowed in paragraph (a). Any such request shall be made in writing to the Director.

(c) Any request for an increase in injection rate shall demonstrate to the satisfaction of the Director that the increase in volume will not interfere with the operation of the facility, its ability to meet conditions described in this permit, change its well classification, or cause migration of injectate or pressure buildup to occur beyond the Area of Review.

(d) The injection rate shall not cause an exceedance of the injection pressure limitation established under item 5(a) of this section.

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D. MONITORING, RECORDKEEPING, AND REPORTING OF RESULTS

1. Monitoring Program

(a) Continuous monitoring devices

Temperature, annular pressure, and injection pressure shall be measured at the wellhead. Injection rate shall be measured in the supply line immediately before the wellhead. The Permittee shall continuously monitor and record the following parameters:

Parameter	~~Monitoring~~Recording Frequency	Instrument
injection rate (gallons per minute)	~~continuous~~**hourly**	digital recorder
daily injection volume (gallons)	daily	digital recorder
injection total volume (gallons)	~~continuous~~**daily**	digital totalizer
wellhead injection pressure (psig)	~~continuous~~**hourly**	digital recorder
annular pressure (psig)	~~continuous~~**hourly**	digital recorder
injection fluid temperature (degrees Fahrenheit)	~~continuous~~**hourly**	digital recorder
~~quartz capillary pressure (psig)~~	~~continuous~~	~~digital recorder~~

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Appendix A WELL CONSTRUCTION PLANS AND AREA OF INVESTIGATION BASE MAP

WD-1P Proposed Well Bore Diagram
Figure 1 (WD-1P location)
Figure 2, (WD-1P location)

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All other permit conditions remain unchanged.

This minor modification to become effective on

__[original signed May 22, 2008]_

__[original signed by Alexis Strauss]
Alexis Strauss, Director
Water Division