



Ron Chapman, MD, MPH
Director & State Health Officer

State of California—Health and Human Services Agency
California Department of Public Health

DRINKING WATER FIELD OPERATIONS BRANCH
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EDMUND G. BROWN, JR.
Governor

December 19, 2012

Mariposa Institute Board Members
c/o Mr. Jay Gerard
P.O. Box 387
Ukiah, CA 95482

**RE: MARIPOSA INSTITUTE (SYSTEM NO. 2300840)
COMPLIANCE ORDER #02-03-12R-001-2300840-42**

Dear Mariposa Institute Board Members:

Sections 64650 through 64665 of Title 17 of the California Code of Regulations requires that multi-barrier treatment sufficient to obtain 3-log *Giardia* reduction and 4-log virus reduction be installed on surface water sources and groundwater under the direct influence of surface water sources. The enclosed Compliance Order #02-03-12R-001-2300840-42 has been issued to Mariposa Institute Water System for failure to provide multi-barrier treatment (i.e. filtration and disinfection) for a source which has been identified by the Department as groundwater under the direct influence of surface water.

Please review the compliance order carefully as it contains legally binding provisions to which Mariposa Institute must adhere. Non-compliance with the order may result in the Department taking further enforcement actions.

Your Water System will be billed at the Department's current hourly rate of \$126.00 for the time spent issuing this compliance order and any follow-up time required of Department staff to ensure compliance. The Water System will receive a bill from our Fee Billing Unit in Sacramento.

Mariposa Institute
December 19, 2012
Page 2

If you have any questions regarding this compliance order, please contact Jo Wildflower at (707) 576-2818.

Sincerely,

A handwritten signature in cursive script that reads "Michelle F. Frederick".

Michelle F. Frederick, P.E.
District Engineer
Mendocino District

Enclosures: Compliance Order 02-03-12R-001-2300840-42

c: Mendocino County Environmental Health
501 Low Gap Road, Room 1326
Ukiah, CA 95482

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Compliance Order No. 02-03-12R-001-2300840-42

**STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH**

IN RE: Mariposa Institute
Water System No. 2300840
P.O. Box 387
Ukiah, CA 95482

TO: Mr. Jay Gerard
President, Board of Directors
Mariposa Institute

Date Issued: December 19, 2012

**COMPLIANCE ORDER FOR VIOLATION OF HEALTH AND SAFETY CODE
SECTION 116555(a)(3) AND TITLE 22, CALIFORNIA CODE OF REGULATIONS
SECTIONS 64652 (a) AND 64653 (a).**

Section 116655 of the California Health and Safety Code authorizes the issuance of an order for failure to comply with a requirement of California Safe Drinking Water Act (California Health and Safety Code, Division 104, Part 12, Chapter 4,

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commencing with Section 116270), or any permit, regulation, or standard issued thereunder.

The Division of Drinking Water and Environmental Management of the State of California Department of Public Health hereby issues a compliance order (Order) to Mariposa Institute for failure to comply with Health and Safety Code Section 116555(a)(3) and Title 22, California Code of Regulations Sections 64652 (a) and 64653 (a).

STATEMENT OF FACTS

Mariposa Institute (hereinafter System) is currently operating its water system under Domestic Water Supply Permit 02-03-07P-2300840, issued by the California Department of Public Health (hereinafter Department) on July 16, 2007. The System is a transient non-community water system, as defined in the California Health and Safety Code (hereinafter H&S Code), serving water to approximately 15 service connections within its service area located in the western foothills of Ukiah in Mendocino County. The System serves a group retreat facility, residential units and a daycare. The water system consists of one well source, Well 01, and three pressure zones. The pressure zone fed by the well receives chlorination at the wellhead. Two of the three pressure zones do not receive chlorination automatically but are inconsistently, manually batch treated.

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As more fully set forth below, the Department believes that the System is in violation of H&S Code Section 116555(a)(3) and Title 22, California Code of Regulations (hereinafter CCR), Sections 64652 (a) and 64653 (a).

Well 01 is the only permitted source water for the System. Table 1, on the following page, provides a summary of the raw water bacteriological quality data from Well 01 for *Escherichia Coli* (hereinafter *E. coli*) during the period from August 2007 through May 2012.

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Table 1. *E. coli* Results from Well 01

Period	Average <i>E. coli</i> (MPN/100 mL)	Maximum <i>E. coli</i> MPN/100 mL
January	11.6	87.6
February	16.6	107.1
March	3.0	19.9
April	0.3	1.0
May	1.0	2.0
June	2.2	9.8
July	0.0	0.0
August	0.0	0.0
September	0.0	0.0
October	5.4	27.2
November	3.4	12.2
December	86.4	1,413.6

Two measurements of turbidity were collected by the System at Well 01. In May 1998 and September 2004, the turbidity was 33 NTU and 2.80 NTU, respectively.

Department staff conducted a field inspection of the System's facilities on July 18, 2012. During the inspection, the chemical feed pump, whose purpose is to inject sodium hypochlorite (a disinfectant) into the water supplied by Well 01, did not operate during manual operations of the well. This was tested and confirmed by the



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Department in several ways. The chemical feed pump was not operating and a sample tap immediately downstream of the chemical feed pump did not contain any chlorine residual. Based on these observations, the Department found the disinfection facilities and operations to be unreliable.

On August 14, 2012, the Department sent the System correspondence stating that the source water had been determined to be groundwater under the direct influence of surface water and that the System could not continue to operate in its present condition. The System was instructed to provide each customer a boil water notice until reliable disinfection was provided to achieve 99.9 percent (hereinafter 3-log) *Giardia lamblia* and 99.99 percent (hereinafter 4-log) virus inactivation.

On August 15, 2012, the Department again inspected the System. The chemical feed pump was operating but no chlorine odor was detected at the tanks that supply the cabins nor was there any measurable chlorine residual in the distribution system.

On August 20, 2012, Ms. Amy Little of the Department confirmed with Ms. Sage Mountainfire, the then Board President, that the boil water notice was in place. Ms. Mountainfire indicated that a meeting was held on Sunday evening, August 19, 2012, to notify all those served by the Mariposa Institute to boil water or purchase bottled water.

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AUTHORITIES

H&S Code section 116555 states in relevant part:

(a) Any person who owns a public water system shall ensure that the system does all of the following:

(3) provides a reliable and adequate supply of pure, wholesome, healthful, and potable water.

H&S Code section 116655 states in relevant part:

(a) Whenever the department determines that any person has violated or is violating this chapter, or any permit, regulation, or standard issued or adopted pursuant to this chapter, the director may issue an order doing any of the following:

(1) Directing compliance forthwith.

(2) Directing compliance in accordance with a time schedule set by the department.

(3) Directing that appropriate preventive action be taken in the case of a threatened violation.

(b) An order issued pursuant to this section may include, but shall not be limited to, any or all of the following requirements:

(1) That the existing plant, works, or system be repaired, altered, or added to.

(2) That purification or treatment works be installed.

(3) That the source of the water supply be changed.

(4) That no additional service connection be made to the system.

(5) That the water supply, the plant, or the system be monitored.



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(6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the department.

California Code of Regulations, Title 22, section 64652 (a) states in relevant part:

(a) Each supplier using an approved surface water shall provide multibarrier treatment that meets the requirements of this chapter and reliably ensures at least:

- (1) A total of 99.9 percent reduction of Giardia lamblia cysts through filtration and disinfection; and
- (2) A total of 99.99 percent reduction of viruses through filtration and disinfection.

California Code of Regulations, Title 22, section 64653(a) states in relevant part:

(a) All approved surface water utilized by a supplier shall be treated using one of the following filtration technologies unless an alternative process has been approved by the Department pursuant to subsections (f), (g) and (h):

- (1) Conventional filtration treatment
- (2) Direct filtration treatment
- (3) Diatomaceous earth filtration
- (4) Slow sand filtration.

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DETERMINATIONS

Based on the above-described Statement of Facts, the Department determines that the System has violated the following:

1. H&S Code section 116555 (a)(3) in that the System does not have sufficient treatment to provide a reliable and adequate supply of pure, wholesome, healthful, and potable water.
2. Title 22, CCR, Section 64652 (a) in that the System does not have the necessary treatment capacity to achieve 99.9 percent reduction of *Giardia lamblia* and 99.99 percent reduction of viruses and does not provide multi-barrier treatment.
3. Title 22, CCR, Section 64653 (a) in that the System does not use any of the listed filtration technologies or an alternative process approved by the Department.

ORDER

Pursuant to Section 116655 of the California Health and Safety Code, the Department and its Director hereby orders the system to do the following:

Directive 1. By May 30, 2013, the System shall submit to the Department for its approval a proposal that is based on an engineering assessment and that either: (a) identifies a reliable groundwater source that meets the requirements of Title 22 of the California Code of Regulations and the



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California Well Standards Bulletins 74-90 and 74-81 and specifies how the source will be connected to the water system, OR (b) proposes a plan and time schedule to bring the water system into compliance with the Surface Water Treatment regulations found in Chapter 17, Sections 64650 through 64666, of Title 22 of the CCR. If the System chooses to comply with subdivision (b) above by proposing a plan, it must identify the source, and if the System proposes to use its existing source, then the plan shall include, at minimum, a preliminary design and specifications for the proposed surface water treatment plant. The System shall ensure that the Department-approved proposal required by Directive 1 is operational by **December 15, 2013.**

Directive 2. Effective immediately, the System shall post in public places and provide weekly notification to its visitors, staff, residents and all customers that the Department is advising that boiled tap water or bottled water be used for drinking and cooking purposes as a safety precaution. The public notification documents and procedure shall be approved by the Department. **The boil water advisory requirements shall remain in effect until the System completes Directive 3 and the Department advises the System that it may cease these notifications.**

Directive 3. By March 1, 2013, the System shall provide, and maintain documentation to demonstrate, 3-logs inactivation of *Giardia lamblia* cysts



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and 4-logs inactivation of viruses through disinfection, until the System has complied with Directive 1. To obtain credit for 3-logs inactivation of *Giardia lamblia* cysts and 4-logs inactivation of virus, the System shall do the following:

- a. **By January 15, 2013**, submit to the Department for its approval a schematic that shows how the System proposes to re-configure the piping arrangement that ensures that all well water has adequate contact time with sodium hypochlorite to ensure adequate disinfection and which does not include manual batch chlorination any water.

- b. **By January 31, 2013**, the System shall ensure that the Department-approved reconfiguration of the pipes is completed.

- c. **By February 15, 2013**, install a Department-approved disinfectant residual analyzer and alarm system.

- d. **By February 22, 2012**, submit to the Department for its approval a Disinfection Operations Plan, which contains the following:
 - i. The minimum chlorine residuals and storage tank heights necessary to maintain 3-logs inactivation of *Giardia lamblia* cysts and 4-logs inactivation of viruses during both winter and



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summer maximum flow rates, using a pH of 8 and a temperature of 8 degrees Celsius.

ii. A list of all water quality parameters to be monitored, including the monitoring location, instruments used to measure the water quality parameters, and the planned monitoring frequency. These shall include, at minimum, daily raw water turbidity measurements and storage tank heights, continuous chlorine residual measurements, weekly pH and temperature measurements, and weekly raw water bacteriological quality measurements.

iii. A description of the operation of the alarm system, including its testing frequency and procedures, which must ensure that the alarm notifies the operator within five minutes and is tested on a monthly basis.

iv. The disinfectant residual analyzer maintenance procedures, which must conform to the manufacturer's recommendations and ensure that the sample flow through the analyzer is verified and recorded on a monthly basis.

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The System shall ensure that disinfection operations are maintained in accordance with the Department-approved Disinfection Operations Plan at all times.

e. **By February 22, 2013**, submit to the Department for its approval a template for a monthly report designed to document that 3-log inactivation of *Giardia lamblia* cysts and 4-log inactivation of viruses was maintained on each day of the month and which includes, at minimum, the following:

- i. Total amount of water produced at Well 01, total amount of water treated, daily turbidity measurements from Well 01, weekly sodium hypochlorite dosages, all monitoring equipment maintenance and calibrations, monthly alarm testing status for the disinfection system, disinfection inactivation parameters including maximum weekly pH, minimum weekly temperature, minimum daily disinfectant residual in the water leaving the contact storage tank(s), the minimum daily contact volume, maximum flow rate leaving the contact volume and the minimum daily pathogen inactivation value achieved for viruses and *Giardia lamblia* cysts. The report shall also list any verbal or written complaints of water quality-related illnesses or other water quality problems.

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may cease, the System shall provide the Department-approved notification to its customers.

Directive 6. By January 31, 2013, the water system shall collect weekly bacteriological raw water samples and weekly bacteriological distribution samples. The chlorine residuals shall also be collected at the time the distribution system bacteriological samples are collected. The bacteriological samples shall be analyzed by an approved laboratory. The raw water bacteriological quality must be analyzed by a method that enumerates for total coliform and *E. coli* levels in the sample. The locations of the bacteriological sampling in the distribution system shall be performed in accordance with a revised bacteriological sampling plan, to be submitted to the Department for its approval by **January 15, 2013.** Sampling in accordance with this directive **shall continue until the Department advises the System that it may cease the sampling.**

Directive 7. By January 31, 2013, the System shall submit to the Department: (1) the names of the Mariposa Institute Board of Directors and their contact phone numbers; (2) a population survey that details the number of permanent and seasonal residents, regular staff and the number of visitors on the 60th busiest day of the year; and (3) a copy of the contact with a certified water treatment operator that includes the preventative maintenance and daily site visits required in Directive 3.

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ii. The System shall provide the Department-approved monthly report to the Department on the tenth day of each month following the month of operation, for operations beginning on **March 1, 2013** and continuing until the month in which the Department advises the System that the reporting may cease. The monthly report shall be signed by the licensed Chief Water Treatment Operator for the System.

Directive 4. If, after completion of Directive 3, the System determines 3-log inactivation of *Giardia lamblia* cysts and 4-log inactivation of viruses through disinfection has not been met during any 4-hour period, the System shall immediately contact the Department and shall comply with Tier 1 (24-hour) public notification requirements in conformance with Section 64463.1, Title 22 of the CCR, which requires that the System issue a boil water advisory to its customers. The public notification documents and procedure shall be approved by the Department prior to distribution to its customers.

Directive 5. By **March 1, 2013**, the System shall submit to the Department for its approval public notification to its customers of inadequate surface water treatment in conformance with Section 64463.4, Title 22 of the CCR. By the 10th day of each month, beginning on March 10, 2013, and continuing until the month in which the Department advises the System that the notification

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Directive 8. By July 31, 2013, the System shall submit a completed TMF Assessment Form to the Department. The TMF Assessment Form can be found on the Department's website at:

<http://www.cdph.ca.gov/certlic/drinkingwater/Pages/TMF.aspx>.

Directive 9. The System shall contact the Department within 24 hours by telephone for any of the following events: (1) An illness complaint is reported to any Mariposa Institute staff that may be related to the water quality; (2) total coliform or *E. coli* is detected in the distribution system; (3) the raw water source turbidity measured prior to treatment is greater than 2.0 NTU; (4) short periods of pressure loss (less than 5 psi) and major water outages; or (5) any event that water system is aware of that may affect the ability of the treatment plant to produce safe, potable water including, but not limited to, spills of raw sewage or other hazardous chemicals.

The Department reserves the right to make such modification to this Order as it may deem necessary to protect public health and safety. Such modifications may be issued as amendments to this Order and shall be effective upon issuance.

Nothing in this Order relieves the System of its obligation to meet the requirements of the California Safe Drinking Water Act (CHSC, Division 104, Part 12, Chapter 4,



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commencing with Section 116270), or any permit, regulation, standard or order issued thereunder,

All submittals required by this Order shall be submitted to:

Ms. Michelle F. Frederick, District Engineer
Mendocino District
California Department of Public Health
50 D Street, Suite 200
Santa Rosa, CA 95404

PARTIES BOUND

This Order shall apply to and be binding upon the System, its officers, directors, agents, employees, contractors, successors and assignees.

SEVERABILITY

The directives of this Order are severable, and the System shall comply with each and every provision thereof notwithstanding the effectiveness of any provision.

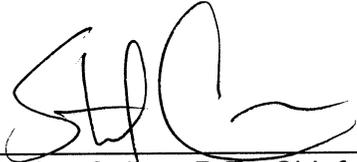
FURTHER ENFORCEMENT ACTION

Division 104, Part 12, Chapter 4, (commencing with section 116270) of the H&S Code authorizes the Department to: issue a citation with assessment of penalties for failure to comply with any order, in an amount not to exceed one thousand dollars (\$1,000) per day for each day the violation continues; take action to suspend or

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revoke a permit that has been issued to a public water system if the system has failed to comply with an order of the Department; and petition the superior court to take various enforcement actions against a public water system that has failed to comply with an order of the Department. The Department does not waive any further enforcement action by issuance of this Order.

The State of California shall not be liable for any injuries or damages to persons or property resulting from acts or omissions by the System, its employees, agents or contractors in carrying out activities pursuant to this Order, nor shall the State of California be held as a party to any contract entered into by the System or its agents in carrying out activities pursuant to the Order.



Stefan Cajina, P.E., Chief
North Coastal Region
Drinking Water Program

Dec. 19, 2012
Date

CERTIFIED MAIL # 7012 1010 0000 3984 0132

2300840/Compliance File-4
02-03-12R-001-2300840-42/AJL

