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October 15, 2012

Mr. W. Dale Harvey, Sr. Engineer
Central Valley Regional Water Quality Control Board
Fresno Branch Office
1685 E Street
Fresno, CA 93706

**Subject: Comments on Tentative Waste Discharge Requirements for Grimmway Enterprises, Inc. Cal-Organic Facility, Kern County**

Dear Mr. Harvey:

Thank you for the opportunity to provide comments on the Tentative Waste Discharge Requirements (WDR) for the Grimmway Enterprises, Inc. (GEI) Cal-Organic Facility. Cascade Earth Sciences (CES) has prepared the following comments on behalf of GEI. For convenience, each comment has a heading identifying a specific location in the Tentative Waste Discharge Requirements. The text in question has been re-typed in italics for clarity followed by the comment then a recommended or requested revision with ~~strike-through~~ for parts to delete and underline for parts to add where appropriate.

## GENERAL COMMENT

To reflect the character and use of the water, we have made a point to refer to the "wastewater" as "wash water". Please consider making that revision throughout the WDR.

## FINDINGS

**Findings, #2, Sentences 2 and 3, Page 1**

*"GEI purchased the Facility in 1984 and has operated and discharged wastewater to the surrounding agricultural fields (Land Application Areas) since that time. The Facility was used for the same purposes (washing of produce) prior to purchase in 1984, so wastewater has been discharged to the surrounding Land Applications for over 28 years."*

GEI completed purchase of the Cal-Organic processing facility (Facility) on May 5, 2001. Prior to that date it was owned and operated by others. The Facility was constructed in 1980 and, as far as we are aware, the wash water has been land applied since the Facility began production. We recommend the wording be corrected to the following:

> "GEI purchased the Facility in ~~1984~~ 2001 and has operated and discharged ~~waste~~ wash water to the surrounding agricultural fields (Land Application Areas) since that time. The Facility was constructed in 1980 and has been used for the same purposes (washing of produce) prior

to purchase in 2001, so ~~waste~~ wash water has been discharged to the surrounding Land Application~~s~~ Areas for over ~~28~~ 30 years."

**Findings, Proposed Discharge, #11, Page 3**

*The following design flows were proposed in the RWD to meet the projected demands of the 584 acre Land Application Area.*

The proposed discharge, as identified in the Report of Waste Discharge (RWD), was based on the expected maximum design flow from the vegetable washing facility. The Land Application Area was sized to handle the expected flow. The flow was not planned to meet the Land Application Area demand. In fact, the irrigation and nutrient demands of the Land Application Area exceeds the design flow. Therefore, the wording should be changed to more accurately reflect the actual considerations. We propose the following wording:

"The following design flows were proposed in the RWD to meet the projected ~~demands of the 584 acre Land Application Area.~~ design capacity of the vegetable washing facility. The proposed design flows are within the irrigation capacity of the 584-acre Land Application Area."

**Findings, Specific Site Conditions, #17-19, Page 4**

*"17. Soils in the vicinity of the Facility and the Land Application Areas are predominantly Kimberlina fine sandy loam and Granoso loamy sand…"*

*"The Granoso loamy sand…is described as a Class 3s soil."*

The RWD prepared by CES identified the soils as Kimberlina fine sandy loam and Cajon loamy sand from old data and mapping available at the time the RWD was prepared. The Central Valley Water Board staff have correctly updated the map unit name from Cajon loamy sand to the current map unit of Granoso loamy sand, although 15% of the area is mapped as Granoso sandy loam. The Granoso loamy sand has a land capability class of 3e, whereas the Granoso sandy loam has a land capability class of 3s. The wording in findings #17 and #19 should be corrected as follows:

"17. Soil in the vicinity of the Facility and the Land Application Area are predominantly Kimberlina fine sandy loam, ~~and~~ Granoso loamy sand, and Granoso sandy loam…"

"19. The Granoso loamy sand and sandy loam soils have low available water capacity and are described as Land Capability Class 3e and 3s, respectively…The "e" subclass shows that the main hazard is risk of erosion unless a close-growing plant cover is maintained. The "s" subclass indicates the soil is limited mainly because it is shallow, droughty, or stony. The Granoso sandy loam at this site is limited because it is droughty. These limitations can be overcome with appropriate irrigation and crop management."

**Findings, Antidegradation, #34a, Page 7**

*"a. To reduce the organic load of its discharge, the Facility settles solids from the waste stream and uses sprinkler irrigation to evenly distribute the wastewater over the Land Application Areas reducing the organic load to the Land Application Areas and minimizing the potential for anoxic and reducing conditions in soil"*

The organic load in the raw wash water is very low and not reduced by settling. The settling ponds provide settling of silts and sands washed from the organic vegetables, as described in section 1.4.2. of the RWD. The low BOD (~ 8 mg/L) requires very little or no consideration with regard to managing the irrigation of the wash water and is the reason that there is minimum potential for anoxic or reducing conditions. Also, the use of the term, "reducing" with two different definitions ("reducing" load and "reducing" conditions) in the same sentence may be confusing. We suggest the following revision to the finding:

> "a. ~~To reduce the~~ The low wash water BOD concentration provides a low potential organic load ~~of~~ in its discharge. T~~t~~he Facility ~~settles solids from the waste stream and~~ organic load is managed by ~~uses~~ sprinkler irrigation to evenly distribute the ~~waste~~ wash water over the Land Application Areas ~~reducing the organic load to the Land Application Areas and~~ minimizing the potential for anoxic and reducing conditions in soil"

**Findings, Antidegradation, #34b, lines 4 and 5, Page 7**

*"Loading estimates indicate the proposed discharge will add about 44 lbs/ac/yr…"*

The expected range of nitrogen loading from wash water is 12 to 44 lbs/ac annually depending on the area. We suggest the range be provided for an improved perspective on the potential loading rate.

> "Loading estimates indicate the proposed discharge will add about 12 to 44 lbs/ac/yr…"

**Findings, General Findings, #48, Page 11**

Finding 48 concerning the standards set for monitoring well construction and destruction is not applicable for this site and WDR. It should be removed.

**G. Provisions, #11, Page 18**

The first sentence refers to "Discharge Specification C.17". There are only 13 items numbered under C. Discharge Specifications. Discharge Specification 13 appears to be applicable. The reference to "Discharge Specification C.17" should be changed to "Discharge Specification C.13."

**G. Provisions, #14, Page 18**

The total dissolved solids concentration of the source water is increased by approximately 60 mg/L in the wash water. In addition, the Facility is an organic vegetable washing facility and has a limited choice of chemicals for sanitation and cleaning, which minimizes the potential to add salinity to the water. A salinity management plan is not necessary for this discharge.

**G. Provisions, #15, lines 3 -7, Page 18**

*"15. …The Plan shall determine the amount of EC and nutrients that crops grown in the Land Application Areas will take up. The objective of this Plan shall be to identify and utilize site specific data to determine the appropriate pounds per acre of process wastewater that may be applied to the Land Application Area."*

The EC consumption by plants cannot be measured. The EC of the wash water is a measurement which is related to the mineral ion content of the water but is not measureable in plants in terms of uptake. If uptake of the constituents that contribute to salinity is the objective, then the uptake of minerals or salts, such as that measured by plant tissue ash content, should be specified, not EC.

Also, the application of water is generally considered in terms of gallons, million gallons, inches or feet per acre not in terms of pounds of water per acre. If the objective is to identify the amount of wash water that can be applied then it should be required in terms of the common units used for measurement of water volume through irrigation.

Information regarding nutrient and wash water capacity of the crops and soils are discussed in the RWD and the basis of the proposed management practices. We suggest the following edits:

> "15. …The Plan shall determine the amount of ~~EC~~ salts and nutrients that crops grown in the Land Application Areas will take up. The objective of this Plan shall be to identify and utilize site specific data to determine the appropriate ~~pounds per acre~~ amount of ~~process waste~~ wash water that may be applied to the Land Application Area."

## MONITORING AND REPORTING PROGRAM

**Effluent Monitoring, Page 2**

The low nutrient strength of the wash water does not require the intensive weekly sampling and analysis required by the Tentative WDR. The RWD documents that high quality wash water is being discharged to land. The maximum total nitrogen (total Kjeldahl nitrogen + nitrate-nitrogen) concentration in four monthly wash water samples was 5.6 mg/L and the minimum was 3.60 mg/L. The maximum BOD was 9.2 mg/L with a minimum of 7.4 mg/L in two samples. The source water nitrate-nitrogen averaged 1.86 mg/L and the wash water nitrate-nitrogen averaged 2.12 mg/L. The results represent low and stable concentrations. As a result, the RWD prepared by CES recommended quarterly sampling and analysis (RWD Section 4.11, page 10) with annual reporting. Quarterly sampling and analysis will provide a good representation of the discharged wash water.

In addition, the RWD documented a minimal change in sodium and chloride concentration from source water to the wash water. Using the data reported in the RWD, the source water sodium averaged 53 mg/L with a sodium adsorption ratio (SAR) of 1.7 and the wash water sodium averaged 70 mg/L with an SAR of 2.0. The source water chloride averaged 45 mg/L and the wash water chloride average 51 mg/L. The coefficient of variability (standard deviation divided by average) was low at 0.11 for sodium and 0.06 for chloride, indicating relatively stable concentrations for four consecutive monthly samples. Because sodium and chloride is contained in the suite of analyses for

"General Minerals" there is little reason to include sodium and chloride analysis at any more frequent monitoring than for General Minerals.

**Source Water Monitoring, Page 3**

Given the high quality of the source water and wash water testing, we recommend changing the source water testing requirement from semi-annually to annually.

**Land Application Area Monitoring Pages 4, 5, and 6 and Reporting Pages 6 and 7**

The RWD requested that the entire proposed 584 acres be included in the WDR (Finding #11). However, at this time, the wash water volume does not justify use of all the land (Finding #9). More than half the acreage (fields on the east side of the Weedpatch Highway) are not expected to be used until it is justified by an increase in flow from current levels. The Land Application Area Monitoring requirements (pages 4 and 5) or the reporting requirements (page 6) should clearly state that monitoring and reporting is required only for those fields that are part of the area planned for irrigation at the expected flow volume. Fields that are not irrigated with wash water should not be part of the hydraulic, nutrient, and salts load reporting requirements.

Given the low potential loading rates and high wash water quality, it would makes sense that the hydraulic, nutrient, and salts loads be reported on an annual basis in the Fourth Quarter Monitoring Report (page 6) instead tabulating them on a monthly basis in the quarterly reports. Quarterly reports could be limited to effluent monitoring results (flow and quality) and pond monitoring results.

We suggest that the description of the reporting requirements on page 7 should be changed so that 1 and 2 under *"A. All Quarterly Monitoring Reports… Land Application Area reporting"* be moved to *"B. Fourth Quarter Monitoring Reports…"* to read, as follows:

"**A. All Quarterly Monitoring Reports** shall include the following:

**Effluent reporting**:

1. The results of effluent and settling pond monitoring specified on pages 2 and 3.
2. For each month of the quarter, calculation of maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the 12-month rolling average EC of the discharge using the EC value for that month averaged with the EC values for the previous 11 months, <u>beginning with the month of issuance of this Monitoring and Reporting Program.</u>
4. 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.

**Land Application Area reporting**

~~1. The results of the routine monitoring and reporting and loading calculations specified on pages 3 and 4.~~

~~2. For each month of the quarter, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water in millions of gallons to each discrete irrigation area that received wash water during the previous calendar year.~~

~~3.~~1. A summary of the notations made in the Land Application Area log during each quarter. The entire contents of the log do not need to be submitted.

"**B. Fourth Quarter Monitoring Reports**, in addition to the above, by 1 February of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

**Land Application Area reporting**

1. The results of the routine monitoring and reporting and loading calculations specified on pages 3 and 4.
2. For each month of the quarter, calculation of the monthly hydraulic load for ~~waste~~ wash water and supplemental irrigation water in millions of gallons to each discrete irrigation area that received wash water during the previous calendar year."

**Source Water reporting**……"

**Reporting, Page 7, Paragraph 2, line 2**

*"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 direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1."*

None of the monitoring, salinity management, and nutrient management plans and reports required in this WDR require interpretation or proper application of engineering or geologic sciences as defined in the California Business and Professions Code sections 6735, 7835, and 7835.1.

6735 a) All civil (including structural and geotechnical) engineering plans, calculations, specifications, and reports (hereinafter referred to as "documents") shall be prepared by, or under the responsible charge of, a licensed civil engineer and shall include his or her name and license number.

7835 All geologic plans, specifications, reports, or documents shall be prepared by a professional geologist or registered certified specialty geologist, or by a subordinate employee under his or her direction.

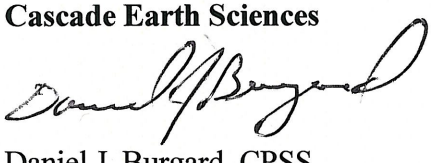
7835.1 All geophysical plans, specifications, reports, or documents shall be prepared by a professional geophysicist, registered certified specialty geophysicist, professional geologist, registered certified specialty geologist, or by a subordinate employee under his or her direction.

Most civil engineers, geotechnical engineers, engineering geologists, geologists, and hydrogeologists are not trained in the planning, design, monitoring and interpretation of soil, water, and crops necessary for successful land application operations to protect groundwater quality. The reports of waste discharge, monitoring plans, cropping plans, salinity management plans, irrigation management plans, nutrient management plans and farming operations related to land application of wash water, rinse water, and process wastewaters require services of professionals trained in soil science, agronomy, irrigation, and agriculture. The requirements for land application systems are really more appropriately prepared and reviewed by a Certified Professional Soil Scientist, Certified Professional Agronomist or an appropriately experienced Certified Crop Advisor. It is important that appropriate professionals address issues appropriate to their training. Please revise the paragraph to read as follows:

> "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 direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. All reports that involve planning, investigation, evaluation or design, or other work requiring interpretation and proper application of irrigation management, nutrient management, soil science, agronomy, or agriculture-related work or processes shall be prepared under direction of properly qualified persons such as experienced professionals holding certification as a Certified Professional Soil Scientist or Certified Professional Agronomist, or an appropriately experienced Certified Crop Advisor."

This concludes the comments on behalf of Grimmway Enterprises, Inc. To discuss these comments in more detail or if you have any questions, please contact me at dan.burgard@cascade-earth.com or (509) 921-0290 or Sean McNally of Grimmway Enterprises, Inc. at smcnally@grimmway.com or (661) 854-6270.

Very Truly Yours,
**Cascade Earth Sciences**



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