

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petition of)
)
M. M. GOMES & SONS, ET AL.)
)
for Review of Order No. 83-15 of the)
California Regional Water Quality)
Control Board, Central Coast Region.)
Our File No. A-341.)
_____)

ORDER NO. WQ 84-8

BY THE BOARD:

On September 16, 1983, the California Regional Water Quality Control Board, Central Coast Region (Regional Board) adopted waste discharge requirements in Order No. 83-15 for Casa de Fruta Roadside Services Complex. This order revised waste discharge requirements adopted July 8, 1983. Manuel Gomes, Jackie Gomes, M. M. Gomes & Sons, Jean Cribari, Patricia Marchant, Emilia Antelline (petitioners) filed a timely appeal of this action with the State Board on October 17, 1983. By letter dated June 21, 1984, attorney for petitioners requested an extension of time for the State Board to review this matter.

I. BACKGROUND

Casa de Fruta Roadside Services Complex comprises approximately 200 acres and includes a restaurant, fruit stand, store, hamburger stand, gift shop, two gas stations, recreational vehicle, park and motel. The complex is located along the Pacheco Pass Highway approximately 13 miles east of Gilroy in Santa Clara County. The complex is on either side of Pacheco Creek which drains into the Santa Clara Valley.

Flows in Pacheco Creek range from several thousand cubic feet per second to no flow. The project site is subject to flooding, but no accurate projection of floodplain area is available. Associated groundwaters sometimes discharge to the Creek and, during high flows, are likely recharged.

Wastes generated at the site are disposed of through subsurface disposal systems. Although the complex has been in operation for some time, a report of waste discharge was not filed until January 10, 1983. At that time, the existing disposal area was estimated to have a capacity of 25,000 gallons per day (gpd). The discharger also planned to expand the disposal facilities up to 59,000 gpd to accommodate additional development of the complex. Expansion plans call for picnic areas, softball fields, tennis courts, waterslide, bumper boat ride, hot tubs, miniature golf courses, tube rides in a flume and additional trailer court spaces, among other things. The Regional Board first adopted waste discharge requirements authorizing Case de Fruta to discharge 25,000 gpd in July 1983 in Order No. 83-15. Order No. 83-15 was revised in September 1983 to authorize additional discharge up to 59,000 gpd.

Pacheco Creek is an intermittent stream flowing over historical streambeds. The record describes the valley as likely being a layered system of braided stream channels consisting of intermittent, discontinuous deposits of tight clay to coarse gravel. A system of this type results in pockets of gravel and sand intermixed with pockets of clay. At the northern end of the site, the stream becomes subterranean during low flow periods.

The project obtains its potable water from groundwater supplies. Data regarding depth to groundwater is scanty. Regional Board found that groundwater exists at depths ranging from 16 to 40 feet. At least one domestic supply well in the area is drawing water from shallow aquifer with well screen

between 30 and 52 feet. Well-head elevations for this and other wells are not included in the record.

The complex uses several different leachfields to dispose of wastewater. Most of the facilities can use either their own individual leachfield, or pump to the so-called "remote leachfield." Wastewater from two facilities is pumped only into the remote leachfield. All other facilities have their own adjacent individual leachfields. A valved sewer system allows use of the adjacent leachfields, or the remote leachfield.

The remote leachfield is 11 feet deep and contains 350 linear feet of 2-foot wide leach trench. The distribution pipe is 3 feet deep. Accurate records of the adjacent leachfields do not exist. For calculation purposes, the discharger's engineer assumed 11,000 linear feet of 2-foot wide trench to a depth of 6 feet. The distribution lines are assumed to be 3 feet below the surface.

The triple leachfield system which serves the burger shack, gift shop, coffee shop, and wine tasting room is 2,150 feet long. It can be bypassed with all wastewater being pumped into the remote leachfield. Flow from this area is estimated by the engineer to be 15,700 gallons per day (gpd).

A recreation building and recreational vehicle office are serviced by a 1,000-foot leachfield. Flow is estimated as 480 gpd. This leachfield can be bypassed with all wastewater being pumped into the remote leachfield.

A 14-unit motel is served by a 2,500-foot leachfield which can be bypassed with all wastewater being pumped into the remote field. Flow is estimated as 1,400 gpd.

The country store, recreational vehicle park and restroom, barbeque, and recreational vehicle dump station discharge to 4,400 feet of leachfield.

It also can be bypassed with all wastewater being delivered to the remote leachfield. Combined flow is estimated as 7,080 gpd.

The two gas stations are served by independent and separate leachfields. The Shell Station flow is 1,500 gpd and leachfield length is 650 feet.

II. CONTENTIONS AND FINDINGS

Petitioners raise a number of issues dealing with the adequacy of the septic system and leachfields. Their basic concern is whether the disposal system is adequate to handle existing and projected flows.

1. Contention: There is not sufficient land area for the leachfields for the existing discharge and proposed expansion.

Finding: The record indicates that there is plenty of land available for a subsurface disposal system capable of handling 59,000 gpd of wastewater. Our concern is not with the acreage per se, but with the question of whether such land is suitable for the planned increase in wastewater flows. Water Code Section 13280 provides that discharges from subsurface disposal systems shall not be prohibited unless there is substantial evidence in the record that such discharges would result in water quality problems. Such evidence is not in the record before us. However, we are concerned with the lack of data in the record to support the finding of Board Order No. 83-15 that there is "sufficient area of suitable land and a design for a system that would be capable of disposing 59,000 gpd wastewater flow". (Emphasis added).

Findings made by an administrative agency in support of an action must be based on substantial evidence in the record. (See, e.g. Topanga Association For A Scenic Community v. County of Los Angeles (1974) 11 Cal.3d 506, 113

Cal.Rptr. 836.) In the case before us, the record does not contain evidence to support this finding made by the Regional Board in Board Order No. 83-15.

We will address first our concerns with flows, secondly examine the disposal area characteristics, and then turn to the design of the leachfield in order to evaluate whether there is adequate suitable land to handle the existing and proposed flows.

a. Flows

It is impossible to determine from the record what existing or projected wastewater flows are. No data from flow measuring devices at Casa de Fruta is included in the record. Flow measuring devices are recommended by the Santa Clara County Health Department and required in Order No. 83-15. Existing and projected wastewater flows have been calculated using estimates of flows based on source type and level of use. Verification of these flow estimates is difficult. No data is available for the use characteristics or volume of service for some facilities. In other cases, facilities are not described in sufficient detail to allow estimation of use frequency. Other estimates of generated wastes are ambiguous or confusing. Some facilities are omitted from the estimates.

Our review of the record indicates that existing flows are in all likelihood greater than 25,000 gpd and projected flows from the proposed expansion will exceed 59,000 gpd. Verification of actual flows is needed, together with a more complete estimation of projected flows, based on the use characteristics and volume of service of the waste sources. Until such verification is made, expansion of discharge flows should not be permitted.

b. Disposal Area Characteristics

The record also lacks adequate information concerning the existing leachfield design and operation, percolation rates and soils. Without this

information, the Regional Board cannot make a substantiated finding that the system can handle existing and proposed flows.

Except for the remote leachfield, there are no as-built schematics for the leachfields which show leach trench depth, width and length. While the record shows that several percolation tests have been conducted, none of these appear to be adequate for the leachfields as constructed. In 1973, ten percolation tests were conducted by the County Health Department near water supply well #4 on the west side of Pacheco Creek. Water supply well #4 is within approximately 200 feet of an existing leachfield.

We do not know at what depth these tests were conducted. Subsequent leachfield construction in the test area was to a depth of 6 feet. The test results were highly variable ranging from 5 min/inch to 60 min/inch. A precise location of the tests is impossible to determine from the record. The record does not show tests were conducted at the leachfield depth.

In 1982 four percolation tests were conducted according to United States Public Health (USPH) service methods at a 5-foot depth. In that area, disposal trenches are 10 feet deep. Again, no map showing exact test location was included in the Regional Board's administrative record. However, the test locations appear to be in the general vicinity of the remote leachfield on the east side of Pacheco Creek. The tests show a high degree of variability. Thus, we have no evidence in the record of percolation tests conducted at the leachfield depth. More percolation tests are needed. The Basin Plan calls for at least three for a leachfield. Given the large size of the proposed leachfield, the variable percolation rates already obtained, and the alluvial soils with pockets of clay and gravel, substantially more percolation testing needs to be done.

The record contains scant information concerning soils. The only data concerning soil profiles is contained in two well logs executed by the driller, not a trained geologist. Consequently, the logs are uninformative, revealing "brown clay" to over 40 feet. No other data is presented. No test boring results or logged test pits are presented. Virtually no soils information at disposal depth is included in the record.

Another shortcoming of the information in the record is the ambiguous and conflicting reports of groundwater elevation. Measurements are listed as depth-to-groundwater with no local ground level elevations. Data for groundwater gradients, aquifer saturated thickness, or aquifer permeability is not included. We do know in terms of general groundwater patterns that during times of groundwater discharge gross groundwater gradients would slope toward Pacheco Creek and downstream. However, the record indicates that during some periods, Pacheco Creek recharges the aquifer. This means a gradient sloping away from the Creek. Many wells, which can locally distort flow patterns, are in the area. Local groundwater patterns in the vicinity of the leachfield area thus may vary from this general pattern.

c. Leachfield Design

Generally, the State and Regional Boards may not specify the particular manner of compliance with a discharge permit. Waste discharge permits specify what requirements are to be met and leave it to the discharger as to how to meet them. However, in reviewing the contentions of petitioner regarding the adequacy of the system to handle present and projected flows, it is appropriate to compare the system's design with generally established design principles. This comparison is not meant to imply how the discharger's system should function; rather the comparison focuses on whether there is sufficient

data in the record from which to conclude that the presently designed system is adequate.

The USPH service "Manual of Septic Tank Practice" stipulates that only trench bottom area should be used for sizing leachfields. The discharer's engineer and the Regional Board used trench sidewall absorption area to compute leachfield capacity. This method of calculation results in a total field area, including space between trenches, smaller than the trench bottom area required by the USPH service method. Since remote field sidewall area is 16 feet squared per linear trench foot and bottom area is 2 feet squared per linear trench foot, the field's capacity is overestimated by eight times. Likewise, the capacities of adjacent leachfields are overestimated by three times.

Sidewall area can be used in sizing seepage pits; however pursuant to USPH guidelines, each pit must be separated from the other by three times the pit's diameter. Effluent can then spread radially from the pit. Proper separation will prevent percolation from one pit from interferring with the others and help to maintain an unsaturated, aerobic environment. When pits are put into a linear or seepage trench configuration, the same relationship should be observed.

State Board staff has calculated that it would take 540 seepage pits, 5 feet in diameter with 8-foot vertical absorption depth, to dispose of the discharer's engineer's estimate of 53,850 gpd discharge to the seepage pits. This would require over 4.5 acres. The discharer's engineer proposed disposal on 1.05 acres. However, as discussed earlier groundwater may be within 16 feet of the surface. In this case, heavily loaded seepage pits or trenches to a depth of 10 feet, as currently designed, are inappropriate in light of the absence of soil analysis and percolation tests performed at this disposal depth.

Furthermore, the separation between trench or pit bottom and groundwater for the expanded disposal area must comply with the Basin Plan. The current Basin Plan prohibitions call for greater than 8 feet separation of trench bottom and groundwater for percolation rates over 5 minutes/inch and greater separation of the bottom of seepage pits and groundwater. Furthermore, we note the provision in the current Basin Plan calling for a minimum 15 foot separation between seepage pit bottom and groundwater in the case of community subsurface disposal systems. If sidewall calculations are used, the Basin Plan seepage pit separation criteria should apply.

Additional scrutiny is needed to determine whether there is adequate acreage in the disposal sites for the existing and proposed flows. Our staff estimates the existing disposal area to be roughly 2 1/2 acres. By way of contrast, assuming a loading rate of 0.8 gpd per foot squared and trenches 10 feet on centers, our staff estimates at least 4 acres would be needed to dispose of existing flows. Thus, to meet the requirements of Order No. 83-15 of a dual leachfield system, 8 acres would be required. We note further that the current Basin Plan calls for a 300 percent area for new community systems.

We conclude that while there is no evidence in the record to show that the discharge of up to 59,000 gpd at the site would cause water quality problems, neither is there adequate data in the records to support the finding of the Regional Board that the land and design is suitable to handle such flows. Based on these conclusions, we have decided to modify the order regarding increased flows. While we will not modify the authorization in Order 83-15 that up to 59,000 gpd may be discharged, we will require that any actual increase in discharge flows be preceded by the development by the discharger of additional information to address the concerns listed above. More accurate

information is necessary regarding existing and projected flows. Additional percolation tests at disposal depths should be conducted. More groundwater data must be obtained. The discharger must provide better justification for the acreage required for the disposal system.

2. Contention: The leachfield is within the 100-year floodplain.

Finding: The Regional Board made no determination as to where the 100-year floodplain is. The Basin Plan is silent concerning disposal facilities within the 100-year floodplain. The general provisions of the Regional Board which are in effect together with the waste discharge requirements require that any transport and treatment facility, within the floodplain be protected. It is unclear whether this applies to below ground facilities such as septic tanks. Septic tanks by their very nature are inately protected from overflow, flooding or washout from a 100-year flood. A leachfield may also be within a 100-year floodplain. Temporary inundation of the leachfield will not create a significant water quality problem. High flood waters recede rapidly. Thus, even if the leachfield and septic tank is within the 100-year floodplain, this fact alone does not pose a problem.

3. Contention: The monitoring program is inadequate.

Finding: We agree. The same lack of data which hinders disposal adequacy determinations affects our review of the monitoring program. It is impossible to know if the adopted monitoring program will detect a failure since we cannot determine if the monitoring wells are properly placed. For example there is only one monitoring well downgradient from the remote leachfield and no monitoring well between the gas station leachfields and two domestic wells which are less than 200 feet away. It is also important that risers to ground surface with inspection lids be installed over septic tanks and leachfields to facilitate inspection.

We believe it is imperative that groundwater information be collected to insure that the monitoring wells will detect the effluent plume. The following factors are of concern: (1) the existing leachfield seems to dispose of all effluent even though arithmetic calculation shows the disposal area grossly undersized; (2) percolation tests show highly variable rates and some very permeable areas; (3) no soils data have been obtained at the disposal depth; (4) depth to groundwater is uncertain; and (5) one of two tests in a monitoring well shows elevated nitrates.

The monitoring program effectiveness is further confounded by the intermittent nature of the discharge. Since waste from many varied sources can be introduced into many different disposal areas, the resulting pollutant plumes will not be continuous but a series of slugs. Without knowledge of groundwater characteristics, sampling frequency cannot be adequately determined. However, semi-annual sampling is not sufficient and the most obvious pollutant, fecal coliform, is not even included in the specified groundwater monitoring wells.

In order to adequately evaluate the discharge from the existing facility, additional monitoring wells and increased reporting frequency are needed. Additional groundwater data, including porosity, permeability, direction of flow and elevation should be collected in order to re-evaluate the number and placement of monitoring wells.

As we have discussed in response to Contention No. 1 above, we believe that any expansion of the discharge beyond existing flows should be preceded by completion of the groundwater study as outlined here.

4. Contention: The operations plan and the system should be certified by outside parties.

Finding: The waste discharge requirements require the system design to be completed by an engineer registered in the State of California and familiar with wastewater systems. Additionally, the plans and specifications must be reviewed by the Regional Board's technical staff.

Other safeguards that the system is adequate are afforded by public notice procedures. Interested public parties have the opportunity for review and comment prior to adoption. The self-monitoring program, in conjunction with the Regional Board staff conducting sample-splitting with the discharger and independent sampling on an unannounced random basis is another method of ensuring an adequate operations plan and system. We therefore conclude it is not necessary to have outside parties certify the plan and system.

5. Contention: The waste discharge requirements should be consistent with the amended Basin Plan.

Finding: The Regional Board adopted a basin plan amendment at the same meeting as the Casa de Fruta waste discharge requirements. This amendment added new standards for septic tanks and leachfield systems. While the State Board has subsequently approved this amendment, pursuant to Water Code Section 1345, a basin plan amendment is not effective until approved by the State Board. The Regional Board was thus required to apply the previous Basin Plan standards in Order No. 83-15. However, in reviewing proposals to expand the discharges, the current Basin Plan should be applied.

III. CONCLUSIONS

1. There is no evidence that the disposal of up to 59,000 gpd will cause water quality problems.
2. There is insufficient information in the record before us to determine the adequacy of Casa de Fruta's wastewater disposal system.

3. Based on the lack of data in the record, no expansion of additional flows should be allowed before it can be demonstrated that there is adequate and suitable area to expand the system. Such determinations should be based on additional data for soils, percolation tests, depth to groundwater, and examination of the system by the Regional Board. County Health officials and any other affected local agencies should be consulted during this process.

4. Even if the leachfield is located within the 100-year floodplain, this should not create a significant water quality problem.

5. Additional monitoring, particularly for fecal coliform, is needed both to determine the adequacy of the existing system, and before water table monitoring wells are installed for any expanded system. Groundwater data, including porosity, permeability, direction of flow and elevation should be collected before installation of water table monitoring wells.

6. The operations plan and system should be adequate if submitted by a registered engineer and reviewed by the Regional Board staff.

7. In reevaluating the waste discharge requirements for the existing system, and in promulgating any new waste discharge requirements for an expanded system, the Regional Board should apply the standards of the amended Basin Plan as applicable to existing and new systems.

IV. ORDER

California Regional Water Quality Control Board, Central Coast Region, Board Order No. 83-15 is hereby amended as follows:

1. The first sentence of Finding No. 3 is deleted.
2. Discharge Specification B.1 is modified to read:

The maximum daily flow shall not exceed 59,000 gpd, or the total available design capacity of the leachfield, whichever is less. Discharges above 25,000

gpd shall not occur until the following actions have been taken by the discharger and approved by the Executive Officer to ensure that the disposal system capacity is adequate.

a. Sufficient data from the flow measuring devices required by the monitoring program must be provided to determine existing flows.

b. Information from additional percolation tests at disposal depths must demonstrate the suitability of leachfield location and size.

c. Sufficient data from the expanded monitoring program must be presented to establish groundwater depth in the area.

d. Acreage requirements for the disposal areas must be recalculated based on the additional data.

e. Confirmation that the inspection risers required by Discharge Specification B.16 have been installed must be provided to the Executive Officer.

3. Discharge Specification B.2 is deleted.

4. The Monitoring and Reporting Program No. 83-15 shall be modified by the Executive Officer to include the following:

a. Groundwater Monitoring shall be revised to include fecal coliform analysis.

b. Groundwater monitoring shall be expanded to include additional wells downgradient from the remote leachfield and between the gas station leachfields and domestic wells Nos. 5 and 6.

5. Board Order No. 83-15 is hereby remanded to the Regional Board for reconsideration in light of the factors discussed in the Order.

V. CERTIFICATION

The undersigned, Executive Director of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 20, 1984.

Aye: Carole A. Onorato
Warren D. Noteware
Kenneth W. Willis
Darlene E. Ruiz
Edwin H. "Ted" Finster

No:

Absent:

Abstain:



Michael A. Campos
Executive Director

1

