

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 98-02

Own Motion Review of the Petition of
**THE VENTURA COUNTY CITIZENS
TO STOP TOLAND LANDFILL**
for Review of Waste Discharge Requirements Order 96-053
of the
California Regional Water Quality Control Board,
Los Angeles Region.

SWRCB/OCC File A-1067

BY THE BOARD:

I. INTRODUCTION

On July 15, 1996, the Regional Water Quality Control Board, Los Angeles Region (Regional Water Board), adopted Order 96-053 (Order) which contains waste discharge requirements (WDRs) issued to the Ventura Regional Sanitation District (District) for the expansion of the Toland Road Landfill. The WDRs contained a provision that prohibited the District from placing municipal solid waste closer than 200 feet to the trace of the Culbertson Fault (as shown on Plate 2 of the Fugro-McClelland study entitled "Fault Exploration and Characterization Study--Toland Road Landfill Expansion" dated December 1992), unless approved by the Executive Officer of the Regional Water Board. On November 25, 1996, the Executive Officer rescinded the setback requirement. The Cities of Fillmore and Santa Paula (Cities) filed a petition for State Water Resources Control Board (State Water Board or Board) review after the adoption of the Order. The Ventura County Citizens to Stop Toland Landfill (Citizens or petitioner) filed a timely petition for review with the State Water Board challenging

the rescission of the setback requirement. The Citizens also submitted a complete request for stay of the effect of the rescission of the setback requirement. This Board denied the stay request after holding a public hearing. See SWRCB Order WQ 97-05. The petitions filed by the Cities and the Citizens were initially consolidated. (See Cal. Code Regs., tit. 23, § 2054.) The Cities and the District have settled their private litigation and, as a result, the Cities withdrew their petition on January 8, 1998.

The State Water Board did not take formal action on the Citizens' petition within the 270 days specified in Title 23, California Code of Regulations, section 2052(d). The State Water Board will, on its own motion, review the Regional Water Board's action as authorized by California Water Code section 13320(a).

II. BACKGROUND

The District filed an application with the Regional Water Board to obtain WDRs for the expansion of the Toland Road Landfill. The Toland Road Landfill is an existing Class III waste management unit. As stated above, the Regional Water Board issued Order 96-053 on July 15, 1996. The Order contained a provision (F.2) which prohibited the District from placing municipal solid waste closer than 200 feet to the trace of the Culbertson Fault, as shown on Plate 2 of the Fugro-McClelland study entitled "Fault Exploration and Characterization Study--Toland Road Landfill Expansion" dated December 1992. To the west of the landfill, the Culbertson Fault is mapped as a Holocene fault.¹ The District conducted studies subsequent to the issuance of the Order. The Executive Officer of the Regional Water Board determined that

¹ A Holocene fault is a fault which is or has been active during the last 11,000 years. (Cal. Code Regs., tit. 27, § 20164.)

there was no compelling evidence of Holocene faulting in the setback area and rescinded the setback requirement. The Executive Officer acknowledged that the recent studies indicated that the Culbertson Fault may possibly project north of the existing landfill, and permitted the District to proceed with grading of the expansion area with the condition that the District suspend grading if it discovered any evidence of Holocene faulting during grading activities.

Petitioner has requested a hearing for the purpose of presenting a carbon dating analysis that was performed in January of 1997. This analysis is helpful for determining the age of faulting at the site. The record in this matter was supplemented with this additional evidence and was considered by the State Water Board during the review of this petition. (See Cal. Code Regs., tit. 23, § 2066.) Since this evidence was fully considered, there is no reason to hold an evidentiary hearing for this purpose.

In a letter dated February 27, 1998, petitioner requested that the record be supplemented with new evidence. The State Water Board may augment the record with factual evidence if the requesting party demonstrates that the evidence was either improperly excluded from the record or that it could not have been submitted previously. (See Cal. Code Regs., tit. 23, § 2066.) Petitioner requests that the following evidence be added to the record in this matter: (1) evidence that the O'Leary Canyon landslide overlies the northern landfill area obscuring the Holocene-age fracture or zone of fractures and (2) evidence that the District's expert, Dr. Tom Rockwell, interpreted the Culbertson Fault to extend north to a location that would intersect the expansion area. Petitioner has also requested that the State Water Board issue a subpoena to Dr. Rockwell for the purpose of obtaining testimony at the workshop session. Record augmentation is limited to factual evidence. With one exception, the new evidence

offered by petitioner is more appropriately characterized as new interpretations of factual evidence that has existed for some time.

Petitioner has offered new data collected during an investigation conducted by EBA Wastechologies in May of 1997. This investigation consisted of five new soil borings and approximately 20 new test pit excavations. Petitioner claims that the new data and the accompanying report revise an earlier landslide interpretation as to the cause of the offset to high terrace deposits. Based upon the new evidence, petitioner asserts that these offsets may have been caused by the Culbertson Fault, rather than a landslide. This new evidence should be reviewed by the Regional Water Board for the limited purpose of considering whether the offsets were caused by a landslide or by Holocene faulting. The Regional Water Board should also seek clarification from Dr. Rockwell on his earlier interpretation of the location of the Culbertson Fault. The Regional Water Board has the authority to issue subpoenas and could exercise that authority if necessary. The Regional Water Board has the authority to consider any evidence or information relating to faulting, including the above.

Furthermore, the Regional Water Board has the authority to modify the Order if evidence of Holocene faulting is discovered. Pursuant to the Order, a geologic map must be prepared for all final grades and inspected and approved by Regional Water Board staff prior to the construction of a liner system and no disposal can take place in any area until the corresponding construction is completed and certified by Regional Water Board staff. (Order 96-053, Provision F.2.) The District is required to report any evidence of Holocene faulting and the Order specifically allows the Regional Water Board to modify, revoke and reissue, or terminate the Order based upon information received by the Regional Water Board. (Order

96-053, Provision G.1.) The Regional Water Board itself is required to consider any modifications to the Order. (Wat. Code § 13223, subd. (a).)

III. CONTENTIONS AND FINDINGS²

Petitioner challenges the Regional Water Board's determination that the landfill expansion is not located on or within 200 feet of a Holocene fault. Petitioner's specific arguments and our findings are set forth immediately below.

1. Contention. Petitioner contends that the Regional Water Board erred by issuing the Order without additional seismic investigation at the site. Specifically, petitioner argues that the Regional Water Board improperly deferred investigation of the northern expansion area, that it improperly limited the District's standard to a showing of no "known" Holocene faults, and that it improperly limited its attention to major faults and ignored other fracturing at the site.

Finding. The landfill is subject to the Porter-Cologne Water Quality Control Act, State Water Board policies and regulations (including Title 27, California Code of Regulations, Division 2, Chapters 1-7 [hereinafter "state regulations"]), and the federal Resource Conservation and Recovery Act Subtitle D regulations found in 40 Code of Federal Regulations (C.F.R.), section 258 (hereinafter "Subtitle D regulations"), which govern municipal solid waste landfills. In 1993 the State Water Board adopted Resolution 93-62 (Policy for Regulation of Discharge of Municipal Solid Waste) which requires Regional Water Boards to incorporate Subtitle D requirements in WDRs for landfills.

² All other contentions raised in the petition, which are not discussed in this order, are dismissed. (Cal. Code Regs., tit. 23, § 2052; *People v. Barry* (1987) 194 Cal.App.3d 158 [239 Cal.Rptr. 349].)

Applicable state regulations provide that expansions of Class III landfills shall not be located on known Holocene faults. (Cal. Code Regs., tit. 27, § 20260, subd. (d).) Applicable Subtitle D regulations provide the following:

“(a) New MSWLF [municipal solid waste landfill] units and lateral expansions shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Director of an approved State that an alternative setback distance of less than 200 feet (60 meters) will prevent damage to the structural integrity of the MSWLF unit and will be protective of human health and the environment.

“(b) For the purposes of this section:

“(1) Fault means a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

“(2) Displacement means the relative movement of any two sides of a fault measured in any direction.

“(3) Holocene means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.”
(40 C.F.R. § 258.13.)

The Order contains the following findings:

“12. Supplemental hydrogeological and geotechnical reports include: June 1992 ‘Culbertson Fault Study;’ December 1992 ‘Fault Exploration and Characterization Study;’ July 1995 ‘Focused Geologic Investigation;’ August 1995 ‘Investigation of Surface Water Seeps in the Vicinity of the Toland Road Landfill, Ventura County, California;’ and January 1996 ‘Geologic and Geotechnical Investigation, Toland Road Landfill Expansion.’ Data from these investigations were used to characterize the geology and hydrogeology of this expansion area.”

“13. Based on the reports identified in Finding 12, there are no known active faults within 200 feet of the Toland Road Landfill. Active faults are defined as Holocene Epoch faults that have exhibited surface movement in the last 11,000 years. The nearest active major fault, the San Cayetano Fault, is located approximately 1.7 km (1.1 mi) north of the landfill. Located approximately 0.3 (0.2 mi) to 5.2 (3.2 mi) km west of the landfill are the traces of the Thorpe, Orcutt, and Culbertson flexural slip faults, which as verified by field investigations, do not pass within 200 feet of the landfill.”

The Order also includes "Provisions for Containment Structures." Provision F.2 provides, in relevant part, that:

"No disposal shall occur in a new area until the corresponding construction is completed and certified by Regional Board staff. The discharger shall place no municipal solid waste closer than 200-feet normal to the trace of the Culbertson Fault as shown on Plate 2 of the Fugro-McClelland study entitled 'Fault Exploration and Characterization Study-Toland Road Landfill Expansion' dated December 1992, unless approved by the Executive Officer."

The findings appear inconsistent with Provision F.2 because a setback would not be required in the absence of Holocene faulting. The transcript of the Regional Water Board's meeting provides insight. After reviewing the studies conducted by the District, the Regional Water Board staff concluded that there was no compelling evidence of Holocene faulting at the site. On July 3, 1996, twelve days before the Regional Water Board meeting, staff met with Dr. Robert Yeats, a geologist familiar with the subject area. Dr. Yeats concluded that the investigations suggested that there was active earthquake faulting at the site. The District's geologist rebutted Dr. Yeats' conclusion. Since Regional Water Board staff did not have sufficient time to fully consider all of the comments, it proposed including the 200-foot setback requirement contained in Provision F.2.

It may have been preferable to delay action on the WDRs until staff had sufficient time to fully analyze Dr. Yeats' conclusions. As it turns out, a few months after the adoption of the Order, experts on both sides of the issue agreed that the trace of the Culbertson Fault did not traverse the landfill as earlier opined by Dr. Yeats. The Executive Officer agreed and on November 25, 1996, rescinded the setback requirement. The Executive Officer stated that there was a possibility, however, that the Culbertson Fault projected north of the landfill.

Petitioner alleges that the Regional Water Board improperly deferred siting requirements by allowing the District to proceed with expansion activities even though there was a possibility that the Culbertson Fault may project into the northern expansion area. That is not an accurate characterization of the November 25, 1996, action.

The Executive Officer stated that there was a "possibility" that the Culbertson Fault projected to the north of the landfill and allowed the District to continue expansion activities and continue to study the northern area to "assure" that there was no evidence of Holocene faulting. This language does not indicate that the Executive Officer changed his position about the presence of Holocene faulting throughout the site. The Order only allowed the Executive Officer to lift the setback requirement if it was demonstrated that the Culbertson Fault did not intersect the landfill as shown in a fault exploration study dated December of 1992.

Therefore, even if the Executive Officer believed that there was sufficient evidence demonstrating that the trace of the Culbertson Fault projected to the northern area and came within 200 feet of the expansion area, the Executive Officer lacked the authority to modify the findings contained in the Order and revisit faulting (siting) issues in areas other than the setback area.³ Thus, the Regional Water Board's finding in the Order of no Holocene faulting stands, and the Executive Officer did not and could not modify that finding without taking the matter back to the Regional Water Board itself.

Petitioner's argument, that the Regional Water Board used a siting standard less stringent than the standard called for by the Subtitle D regulations, is without merit. The state regulations prohibit the construction or expansion of a landfill on a "known" Holocene fault.

³ Water Code section 13223 prohibits Regional Water Boards from delegating to their Executive Officers the function of modifying waste discharge requirements.

Subtitle D regulations prohibit the placement of new landfills or lateral expansions within 200 feet of a Holocene fault, unless the owner or operator of the landfill can justify a lesser setback. Petitioner argues that the Regional Water Board relaxed the standard by requiring the District to show the absence of a "known" Holocene fault. Petitioner contends that the District was required to show the absence of any Holocene faults, including those that have not yet been discovered. Although the state regulations refer to "known" Holocene faults, there is no real distinction between the standards articulated in the state regulations and the Subtitle D regulations. Both the state regulations and the Subtitle D regulations prohibit the lateral expansion of landfills on Holocene faults regardless of whether the Holocene fault was known and mapped prior to the project's proposal or discovered during the course of the project.

Subtitle D contemplates situations where Holocene faults have been officially mapped and where they have not. The explanation of Subtitle D regulations provides the following:

"EPA recommends that owners or operators use a map published by the U.S. Geological Survey in 1978 to determine the location of Holocene faults in the United States. For locations in which movement along a Holocene fault has occurred more recently than 1978, owners or operators of new MSWLFs and lateral expansions would need to perform a geologic reconnaissance of the site and its environs to map fault traces and to determine the faults along which movement has occurred in Holocene time, and then to determine the appropriate 200-foot setback zone(s)." (56 Fed. Reg. 51046.)

The Regional Water Board did not limit its review to Holocene faults that were officially mapped or otherwise known before the commencement of the project. It also considered hypothesized fault traces and required studies that would reveal the presence of Holocene faulting. The Regional Water Board made its finding after considering the studies and

investigations designed to identify any Holocene faults. Thus, the Regional Water Board did not use a siting standard less stringent than that required by the Subtitle D regulations.

Petitioner's argument that the Regional Water Board considered only the major faults is also without merit. Again, the Subtitle D regulations define fault as a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side. (40 C.F.R. § 258.13). Displacement means the relative movement of any two sides of a fault measured in any direction. (*Ibid.*) The following explanation is contained in the Federal Register:

"In the proposed rule, a 'fault' was defined as a fracture along which strata on one side have been displaced with respect to that on the other side. In response to comments, EPA revised the definition of fault in today's rule to include a zone or zones of rock fracturing in any geologic material along which there has been an observable amount of displacement of the sides relative to each other. This addition is necessary because faulting does not always occur along a single plane of movement [a 'fault'], but rather along a zone of movement [a 'fault zone']. Therefore, 'zone of fracturing,' which means a fault zone in the context of the definition, is included as part of the definition of fault, and thus the 200-foot setback distance will apply to the outermost boundary of a fault or fault zone."
(56 Fed.Reg. 51046.)

We agree that the term fault includes not only "major" faults, but also zones of fractures. The language contained in Finding 13 of the Order suggests that the Regional Water Board focused on faults that exhibited surface expression.⁴ It is important to note, however, that the Regional Water Board also asserted in its response to the petition that it was unaware of any evidence suggesting the presence of "blind" faulting, or faulting that does not display ground rupture. Since the definition of fault is not limited to those faults exhibiting surface expression,

⁴ Finding 13 states that there are no known "active" faults at the landfill and defines active faults as Holocene Epoch faults that have exhibited surface movement in the last 11,000 years.

Finding 13 should be modified. The investigations performed and the reports required and reviewed by the Regional Water Board adequately addressed the state and federal seismic siting standards because the purpose of those setback requirements is to avoid faults subject to displacement and the zone of deformation.⁵ The seismic design criteria are intended to address seismic hazards due to shaking. All Holocene faults, including faults that do not exhibit surface rupture, must be included in seismic design analysis. (See 53 Fed.Reg. 33332-33333.)

2. Contention. Petitioner argues that the Regional Water Board's determination of the absence of Holocene faulting at the site is not supported by substantial evidence. Petitioner contends that the Regional Water Board erred by allowing expansion in the northern area despite evidence of possible Holocene faulting in that area. Petitioner also contends that the conclusions made regarding alluvium in Trench 21 were premature and not supported by substantial evidence.

Finding. We are not unmindful of the fact that the District was placed in the undesirable position of demonstrating the absence of a certain condition (Holocene faulting) before its project could move forward. Similarly, the Regional Water Board was placed in the situation of deciding how many studies and how much information was necessary to show that the site was free from Holocene faults. In reviewing this petition, we must determine if the Regional Water Board's finding, that no Holocene faulting exists within 200 feet of the Toland Road Landfill, is supported by substantial evidence in the record. (Exxon Company, USA et al.,

⁵ The siting regulations are designed to protect facilities from deformation (i.e., bending and warping of the earth's surface) and displacement (i.e., the relative movement of any two sides of a fault measured in any direction) of the earth's surface that occur when the faults moves. (53 Fed.Reg. 33332.)

Order 85-7.) For the following reasons, we find that the Regional Water Board's finding is supported by substantial evidence.

Both petitioner and the District have enlisted the help of professionals to study the seismic issues at the Toland Road Landfill. Petitioner's consultant concluded that there is Holocene faulting at the landfill, while the District's consultant has found the absence of such faulting. Experts on both sides of the issue are qualified and both interpretations of the data appear reasonable. The fact that no evidence of Holocene faulting was discovered during the extensive trenching performed at the site leads us to believe that the Regional Water Board had sufficient evidence to make its finding.

The District performed numerous geologic investigations at the site. These investigations were performed in accordance with a guidance document published by the U.S. Environmental Protection Agency entitled "RCRA Subtitle D (258) Seismic Design Guidance for Municipal Solid Waste Landfill Facilities." This guidance document establishes protocol for investigation of possible Holocene faulting through the identification of observable fault features at the ground surface. The District's investigations included excavating and geological logging of more than 9,000 feet of trenches and other types of excavations within the property boundary. The trenches were located on or near, and oriented normal to, surficial features that were recognized to be possibly fault-related. The location, length, depth, and orientation of those trenches indicate that, if a Holocene fault were located within the lateral expansion [or within 200 feet], at least one of the trenches would almost certainly have intercepted it, even if that fault did not have surface expression. In other words, the methods utilized would even have revealed faults that did not exhibit surface expression. No evidence of Holocene faulting was identified in any of the trenches.

Even though petitioner speculated that the trace of the Culbertson Fault projected north of the landfill, petitioner did not identify the location of this inferred trace until the time of the stay hearing (May 1997). Petitioner placed this trace in the northwest corner of the property based upon air photo geomorphic evidence. This inferred trace, as drawn by petitioner, is located approximately 150 feet from the footprint of the landfill. This trace was not inferred at the time the Regional Water Board made its finding of no Holocene faults. Given the fact that considerable trenching has been performed throughout the entire site, including the northwest area, in accordance with protocols established by the U.S. Environmental Protection Agency and no evidence of Holocene faulting was detected, we have no basis to disrupt the Regional Water Board's finding, despite petitioner's recent drawing of the trace in the northwest area.

Although the determination of the absence of Holocene faulting at this site should not be made solely on whether or not the fault is officially mapped, it is important to note that official mapping does not indicate the presence of a Holocene fault within 200 feet of the landfill. The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish regulatory zones around the surface traces of Holocene faults which are sufficiently active and well defined and to issue appropriate maps. Alquist-Priolo Earthquake Fault Zones vary in width, but average about one-quarter mile wide and indicate areas where geologic studies should be performed to determine if a particular site is threatened by surface displacement by future faulting. Although staff of the of the California Division of Mines and Geology have identified Holocene faults in the vicinity of Toland Road Landfill, the Earthquake Fault Zone maps for the area, the Santa Paula Peak and Fillmore quadrangles, indicate that the Toland Road Landfill, including the expansion area, does not lie within 200 feet of an Alquist-Priolo Earthquake Fault Zone.

We also find that the Regional Water Board had reasonable and credible evidence that the unfaulted alluvium found in Trench 21 was in the age range of 8,000 to 12,000 years old. The Regional Water Board relied upon a study conducted in 1983. The Regional Water Board made this determination before the results from radiocarbon testing became available. Eight charcoal samples were collected from the alluvium and tested in early 1997, and the results from radiocarbon testing confirmed that the deposits were in the 8,000 to 10,000 year old range.

IV. CONCLUSION

After review of the record and consideration of the contentions of petitioner, and for the reasons discussed above, we conclude that:

1. The federal definition of fault includes not only main faults but also zones of fracturing.
2. The Regional Water Board did not defer siting issues or improperly limit their review to Holocene faults that were officially known or mapped.
3. The Regional Water Board did not limit their review of Holocene faults to those that display surface expression.
4. The Regional Water Board's finding of no Holocene faults throughout the site is supported by substantial evidence in the record.

V. ORDER

IT IS HEREBY ORDERED that Finding 13 is modified as follows:

"13. Based on the reports identified in Finding 12, there are no known active Holocene faults within 200 feet of the Toland Road Landfill. ~~Active faults are defined as Holocene Epoch faults that have exhibited surface movement in the last 11,000 years.~~ The nearest active major Holocene fault, the San Cayetano Fault, is located approximately 1.7 km (1.1 mi) north of the landfill. Located approximately

0.3 (0.2 mi) to 5.2 (3.2 mi) km west of the landfill are the traces of the Thorpe, Orcutt, and Culbertson flexural slip faults, which as verified by field investigations, do not pass within 200 feet of the landfill.”

In all other respects, the petition is denied.

CERTIFICATION

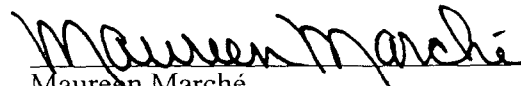
The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 16, 1998.

AYE: John Brown
 Mary Jane Forster
 James M. Stubchaer
 John Caffrey

NO: Marc Del Piero

ABSENT: None

ABSTAIN: None


Maureen Marché
Administrative Assistant to the Board