



Department of  
Toxic Substances  
Control

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MCAS EL TORO  
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## MEMORANDUM

TO: Tayseer Mahmoud  
Office of Military Facilities  
Base Closure Unit  
245 West Broadway, Suite 425  
Long Beach, California 90802

FROM: Sherrill Beard, CHG   
Geologic Services Unit  
245 West Broadway, Suite 425  
Long Beach, California 90802

DATE: March 24, 1997

SUBJECT: Comments on "Response to Comments, Draft Phase II Feasibility Study Report Operable Unit 2B - Site 17, Marine Corps Air Station El Toro, California"

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The Geologic Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the response to comments for the document entitled "Draft Phase II Feasibility Study Report OU-2B - Site 17, Marine Corps Air Station (MCAS) El Toro, California", dated November 4, 1996. The responses were prepared by Southwest Division, Naval Facilities Engineering Command (SWDIV), in conjunction with Bechtel National, Inc. (Bechtel).

Response to comments 2, 4, 5, and 6, are not appropriate and do not satisfy GSU's concerns or answer the questions included in the review of the Draft Feasibility Study. GSU has made an effort to limit comments on workplans and reports to only the most pertinent, as a result of extensive discussions during the May 8th and 9th, 1996, team building in San Diego, California. During the team building meeting, SWDIV and the BRAC Environmental Coordinator (BEC) explicitly requested comments be limited for draft documents and further requested no comments from regulatory agencies be submitted on draft final documents unless they were considered "fatal flaws", in other words, would stop the project from moving forward. Consequently, appropriate and complete responses to GSU comments are expected for this



agreement to succeed. Below is additional clarification and/or explanation why the responses are inappropriate or not complete. To facilitate proper reply to BCT comments, perhaps in the future, response to comments could be approached and resolved as a team, similar to the manner agreed upon during the March 19 meeting regarding the Site 24 feasibility study. It is expected the resolution of each comment listed below will be incorporated into the final document. For easy reference, the original comments are included as an attachment.

**Comment 2, Section 2.2.1.3 - Geology and Hydrology**

The strike out version of the Draft Final RI for Site 17 reports a gradient of 0.15 ft/ft. (Volume I, Section 5.1.1.2 - Geology/Hydrology, page 5-2, third paragraph). However, the crux of this comment was not to point out an editorial error but was to suggest additional hydrogeologic information and explanation be provided in the Geology and Hydrogeology section of the feasibility study. The construction logs in the Draft Final RI show monitoring wells 17NEW1 and 17\_DBMW83 screened in alluvium (sandy silt and silty sand) and monitoring well 17NEW2 screened in bedrock (clayey siltstone and siltstone). The water levels in the alluvium may not necessarily correlated with the water level in the bedrock, consequently, calculation of a gradient is not possible. Two hydrogeologic regimes most likely exist beneath Site 17, alluvium and bedrock. Based on the geomorphology of the site, GSU agrees the flow direction of the groundwater is towards the southwest and gradually changes to a more westerly direction at the southern portion of the site. However, there are not enough wells screened in the alluvium or bedrock to calculate a quantitative gradient. Please explain the nature of these uncertainties in the text of the feasibility study.

It is still unclear how aquifer properties were determined at Site 17. It is unlikely that the aquifer properties at 17NEW1 and 17NEW2 are the same (as reported in the feasibility study) given one well is screened in fine to medium grained alluvium and one well is screened in siltstone. The vertical hydraulic conductivity results from the laboratory permeability tests on soil samples from the screened intervals in 17NEW1 and 17NEW2 are reported as approximately 0.001 feet/day, the horizontal permeability values are assumed to be two orders of magnitude greater than the vertical permeability, and effective porosity of 0.2 is assigned for both wells. This data is then used, along with a gradient of 0.14 ft/ft, to calculate an average linear groundwater velocity of 0.07 feet/day. It is incorrect to use the same aquifer properties for alluvium and bedrock, and

therefore, not likely the groundwater flows at the same rate in bedrock as it does in alluvium material.

There is insufficient data to determine pumping rates of wells at Site 17. The text states "Though no pump tests were conducted at Site 17, pumping rates as estimated from groundwater sampling can range from 500 to 2,000 gallons per day (gpd) for wells at Site 17." Generally, the pumping duration which is needed to sample a monitoring well is not adequate to determine pumping rates. However, if such values are to be estimated and reported, additional information should be presented to support such statements. Include data such as pumping rates and waterlevel measurements while collecting the groundwater samples at each monitoring well. The text also does not clearly state if the range given is for all wells or if one well is 500 gpd, one well is 2000 gpd, and the third well fall somewhere in the middle range.

**Comment 4, Section 2.2.2.6 - Groundwater**

Monitoring well 17NEW2 can not be used as an upgradient well for the purpose of comparing geochemistry. Although, the alluvial groundwater may receive recharge from bedrock groundwater geohydraulic conditions vary significantly, therefore the total and dissolved metals concentrations should not be compared and used to determine if the landfill has impacted groundwater.

**Comment 5, Section 2.2.3.1 - Contaminant Persistence**

Analysis for hexavalent chromium in groundwater, USEPA Method 7196, is a reliable and proven method. The procedures and protocols for sample preparation and analysis are published and approved by USEPA and DTSC Hazardous Material Laboratory. The preparation and analysis should be performed by skilled chemist and compliance with the 24 hour holding time must be maintained. The colorimetric method is the standard analytical method, however, if interference is expected the ion chromatography method can be used.

**Comment 6, Section 2.2.3.2 - Contaminate Migration**

Please refer to Comment 4 for the discussion regarding aquifer parameters.

There is obviously difficulty comparing geochemical variations between the upgradient and downgradient wells because they are screened in different

Mr. Tayseer Mahmoud  
March 24, 1997  
Page 4

formations. Therefore, drawing conclusions about whether a release of metals occurred should not be limited to comparison to the upgradient well but also based on what is in the landfill.

Reviewed by: *Karen Baker*  
Karen Baker, CEG, CHG  
Unit Chief,  
Geological Services Unit

cc: Karen Baker, CEG, CHG, Southern California Region  
File



Cal/EPA

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APR 01 1997

Mr. Tayseer Mahmoud  
California Environmental Protection Agency  
Department of Toxic Substances Control  
Office of Military Facilities  
Southern California Operations  
245 W. Broadway, Suite 350  
Long Beach, California 90802-4444

Subject: Review of Revised Draft Phase II Feasibility Study Report and  
Related Documents for Operable Unit 2B - Site 17, Marine Corps  
Air Station, El Toro, California

Dear Mr. Mahmoud:

On March 7, 1997, California Integrated Waste Management Board (Board) Closure and Remediation Branch staff received a submittal addressing revisions to Draft Phase II Feasibility Study Report for Operable Unit 2B, Site 17, Marine Corps Air Station (MCAS), El Toro. The submittal included the following documents:

- ▶ Response to Comments, Draft Phase II Feasibility Study Report (FSR) for Operable Unit 2B - Site 17, MCAS El Toro, California; and
- ▶ Draft Final Phase II Feasibility Study Report, Operable Unit 2B - Site 17, Marine Corps Air Station, El Toro, California, dated February 1997.

Board Closure and Remediation staff have conducted an in-depth review of the aforementioned documents and compiled several comments. Board staff comments were divided into two categories: Response to Comments on Draft FSR and Revised Draft FSR. Please note that specific comments have numbers corresponding to those from the previous comment letters.

General Comment

Because there is a strong consensus (supported by the reuse plan developed for this site) that the postclosure land use for this site will be a wildlife habitat reserve, Board staff evaluated all available site investigation and feasibility study submittals in context of their relevance and compatibility with the proposed Site 17 reuse. This includes not only any already conducted or future investigation and design work but also methodologies on which these activities have been based.



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3. The response does not provide a satisfactory explanation on the chosen depths of the multiple depth gas monitoring wells. The regulatory requirements for a perimeter landfill gas monitoring network are clearly outlined in 14 CCR, section 17783.5, and both the response and the FS should be tailored to address all requirements listed in this section.

Although Board staff concur that, for the time being, methane off-site migration monitoring would be sufficient at this site, monitoring results should be closely watched, and if necessary, corrective actions be taken immediately. Since corrective actions may involve installing and operating a gas collection system, proposed final cover design should be evaluated for the purpose of compatibility with a gas collection system and ease of installation of such system.

4. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a number of uncertainties associated with the landfill postclosure maintenance, discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR Part 258]).
5. Board staff do not find the position that the soil loss calculations be conducted as a part of the final remedial design acceptable. As it was indicated in the FS, Site 17 experiences severe erosion problems (this was observed during a site visit). Without soil loss estimates, Board staff cannot fully evaluate the proposed final cover alternatives or configuration and sizing of the proposed runoff collection system (including energy dissipation and erosion protection measures). Board staff request that these calculations be conducted at the FS stage in order to determine if the chosen final cover materials are applicable under the high erosion conditions (soil loss calculations should account for these specific materials).

6. Drainage calculations provided in the revised FS indicate a high potential for embankment erosion and high sediment content in the runoff. Board staff request that the sediment content calculations be provided in order to validate the proposed rip-rap erosion protection along the drainage channel. Board staff are concerned that excessive sediment deposits may both impair the holding capacity of the drainage channel and make drainage channel maintenance labor-intensive and thus expensive. Perhaps other erosion reducing measures such as channel widening, and runoff re-routing should be considered in addition to or instead of the rip-rap. Thus, in order to validate the proposed general approach (existing drainage channel with rip-rap protection), it is necessary to include the sediment content calculations at the FS stage.
7. Board staff find this response acceptable.
8. Board staff find this approach acceptable, however, all institutional controls such as site development restrictions and access to monitoring and control systems should be included as an integral part of landfill closure (during the FS stage) and should not be negotiated during the transfer process.
9. Board staff find this response acceptable.

Specific Comments

10. Board staff request that more detailed drainage system drawings be provided as a part of the FS. Of special interest to Board staff are design details depicting the placement of the proposed rip-rap erosion protection.
11. Board staff have no comment.

12. Because of a limited knowledge on the landfill waste fill and its gas generation potential, landfill gas monitoring frequency should remain as quarterly for the period of 30 years (worst case scenario) and the postclosure maintenance cost estimate should account for it. Only after conducting the actual field measurements over an extended period of time (depending on the monitoring results and postclosure land use around the landfill, this may be longer than five years), a request may be submitted to reduce the landfill gas monitoring frequency; however, such request must be substantiated by actual field measurements.
13. Similarly to the previous comment, landfill cap inspections should remain quarterly until, based on field inspections, it can be demonstrated that the on-site conditions have stabilized enough to justify a reduced frequency of inspections. However, until such time, the final cap inspections should be conducted on a quarterly basis. Also, the postclosure maintenance cost estimate should account for quarterly inspections for a period of 30 years.
14. Please refer to the previous comment.

Comments on Revised FS

- A. After reviewing the revised FS, it does not appear that the proposed closure alternatives have been tailored specifically for wildlife habitat conditions. Specifically, the issue of postclosure maintenance and repair procedures and their interference with wildlife were not addressed.
- B. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a number of uncertainties associated with landfill postclosure maintenance, discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR Part 258]).
- C. Should the monolithic native soil final cover be considered as a viable closure option, such proposal must be submitted in conformance with guidelines included in 14 CCR, Section 17773 (c).

Mr. Tayseer Mahmoud  
El Toro OU-2B, Site 17  
March 26, 1997  
Page 6

- D. The FS states that the final cover utilizing a low permeability clay layer will use materials derived from an off-site source (Bee Canyon). However, Board staff have contacted the Orange County Integrated Waste Management Department, the operator of Frank Bowerman Sanitary Landfill (formerly Bee Canyon Landfill), and were informed that their staff were not aware of any inquiries regarding availability of clay for off-site projects. An explanation for how the availability of clay material from that location was validated should be provided.

Should you have any questions regarding this matter, please call me at (916) 255-1195.

Sincerely,



Peter M. Janicki  
Closure and Remediation South  
Permitting and Enforcement Division

Enclosure

[[Page 60327]]

Part II

Environmental Protection Agency

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40 CFR Part 258

Financial Assurance Mechanisms for Local Government Owners and Operators of Municipal Solid Waste Landfill Facilities; Final Rule

[[Page 60328]]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 258

[FRL-5654-3]  
RIN 2050-AD04

Financial Assurance Mechanisms for Local Government Owners and Operators of Municipal Solid Waste Landfill Facilities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

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**SUMMARY:** As part of the President's regulatory reform initiative, the Environmental Protection Agency (EPA) is amending the financial assurance provisions of the Municipal Solid Waste Landfill Criteria, under subtitle D of the Resource Conservation and Recovery Act. The financial assurance provisions require owners and operators of municipal solid waste landfills (MSWLFs) to demonstrate that adequate funds will be readily available for the costs of closure, post-closure care, and corrective action for known releases associated with their facilities. The existing regulations specify several mechanisms that owners and operators may use to make that demonstration. Today's rule increases the flexibility available to owners and operators by adding two mechanisms to those currently available. The additional mechanisms, a financial test for use by local government owners and operators, and a provision for local governments that wish to guarantee the costs for an owner or operator, are designed to be self-implementing. Use of the financial test provided in this rule allows a local government to use its financial strength to avoid incurring the expenses associated with the use of a third-party financial instrument. Demonstrating that the costs of closure, postclosure care, and corrective action for known releases are available protects the environment by assuring that landfills will be properly managed at the end of site life when revenues are no longer being generated and physical structures may begin to break down.

**DATES:** The effective date for this final rule is April 9, 1997. The compliance date for MSWLF's is April 9, 1997, except for small, dry or remote landfills which have until October 9, 1997 to comply.

**ADDRESSES:** Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, first Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F-96-LGFF-FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, it is recommended that the public make

out that such practices are prohibited in many states.

Response: Today's rule maintains the local governments guarantee as proposed and does not restrict its use. As discussed above, EPA believes that a local government that meets the financial, public notice, and recordkeeping and reporting requirements of the financial test will be able to fund the assured SWLF closure, post-closure care or corrective action obligations in a timely manner. A local government may, of course, only guarantee the closure, post-closure or corrective action costs of another MSWLF owner and operator, if such an arrangement is consistent with state law. Even if a local government guarantee is not precluded by state law, a state may nevertheless disallow the use of the guarantee if it determines that there is the potential for abuse.

Comment: Commenters suggested several clarifications to provisions of the proposed local government guarantee. Response: Today's rule clarifies that if a guarantee is cancelled, then pursuant to Sec. 258.74(h)(1)(iii) the owner or operator of the MSWLF must obtain alternate financial assurance within 120 days following "the guarantor's notice of cancellation" (not within 120 days following "the close of the guarantor's fiscal year"). Similarly, today's rule clarifies that if the local government guarantor no longer qualifies to use the financial test, then, pursuant to Sec. 258.74(h)(2)(iii), the owner or operator of the MSWLF must obtain alternate financial assurance within 90 days following "the determination that the guarantor no longer meets the requirements of paragraph (f)(1) of this section"; not within 90 days following "the guarantor's notice of cancellation."

[[Page 60335]]

### C. Discounting of Costs in Calculating Financial Assurance Cost Estimates

The financial assurance requirements under RCRA subtitle D currently require owners and operators to calculate cost estimates in current dollars, and aggregate these estimates (even though these costs may be incurred many years in the future). Owners must obtain a financial responsibility instrument for at least the amount of this aggregated cost estimate. In the preamble to the December 27, 1993 proposed rule (58 FR 68353, 68361), EPA solicited comments on whether MSWLF owners and operators should be allowed to use a present value based on a discount rate to estimate certain financial assurance costs. Cost discounting would allow owners and operators to adjust an aggregated cost estimate to reflect the fact that activities are scheduled to occur in the future and to obtain a financial instrument for less than the aggregate costs (i.e. the "present value" of the aggregated costs). (See Comment Response Document, Section 7) Comment: A number of commenters opposed allowing MSWLF owners and operators to discount financial assurance costs because of their belief that landfill owners and operators often underestimate cost estimates and that the timing of a closure event is uncertain. One commenter suggested that the risks of discounting could be minimized with State oversight if EPA provided specific guidelines. Response: The Financial Accounting Standards Board (which sets standards for corporate accounting) allows discounting only when costs and timing of closure are certain and then only for an essentially risk free rate, adjusted for inflation. The Agency agrees with commenters that cost estimates are frequently underestimated and that the closure date is usually uncertain because sites may fill up more quickly than expected or they may close because of enforcement actions as a result of rule violations. We also agree with the Financial Accounting Standards Board that discounting is only appropriate when cost estimates and closure dates are certain. For these reasons, the Agency has decided against allowing discounting without State oversight. Because the Agency recognizes that there are cases where cost estimates are accurate and closure dates are certain, we have decided to allow State Directors to allow discounting for closure, postclosure, and corrective action costs if they believe that cost estimates are accurate and the closure date is certain and where the local government has submitted a finding from a Registered Professional Engineer that cost estimates are accurate and certifies that there are no known factors which would change the estimated closure date. The State must also determine that the facility is in compliance with all regulations it determines to be applicable and appropriate. Consistent with other elements of this rule, cost estimates must be adjusted annually to reflect inflation and remaining site life. The discount rate used may not be greater than the rate of return for essentially risk free investments, such as 1 year Treasury bills, net of inflation. As noted above, discounting at an essentially risk free rate of return is that allowed by the Financial Accounting Standards Board and was suggested by several commenters. The Government Accounting Standards Board notes that EPA is allowing for discounting for inflation because it allows annual adjustments of cost estimates for inflation. For this reason the Agency requires that inflation be deducted from an essentially risk free rate