



California Regional Water Quality Control Board

Santa Ana Region



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Ida S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

August 1, 2008

Base Realignment and Closure
Attn: Ms. Debra Theroux
Deputy Base Closure Manager
7040 Trabuco Road
Irvine, California 92618

**COMMENTS ON DRAFT FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY
REPORT, OPRABLE UNIT 2C – ANOMALY AREA 3, FORMER MARINE CORPS AIR
STATION, EL TORO
Geotracker No. DOD100131500**

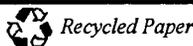
Dear Ms. Theroux:

We have reviewed the above-referenced document, dated May 2008, which we received on May 22, 2008. The report includes a remedial investigation and feasibility study that was completed in accordance with CERCLA (Comprehensive Environmental Restoration Compensation and Liability Act of 1980) requirements and guidance. You will recall that in our previous letters of January 26, 2004, July 26, 2004, February 16, 2006, and September 17, 2007 (copies enclosed) we advised you that we disagree with your determination of the Anomaly Area 3 (AA3) landfill site as a CERCLA release site. The AA3 site is a former borrow pit that was backfilled with construction wastes and an unknown amount of Class III municipal solid waste (MSW). Four and one half feet of soil covers the site, except for isolated areas having only 2 feet of soil cover. Because this site contains MSW, it is therefore subject to the requirements of California Code of Regulations (CCR) Title 27, which include regulations covering groundwater monitoring, erosion control, and landfill cover construction.

In the report, the Navy concluded that the landfill debris (waste) was not impacting the groundwater quality at the site; however, waste has been determined to be in contact with the groundwater. The Navy also concluded that "surface sediments at the site are not impacting water quality in the adjacent Aqua Chinon Wash." The conclusion appears to be based on the analytical results for soil and water samples that were collected both upstream and downstream of the landfill, but does not address the adequacy of erosion and sediment runoff controls at the landfill.

According to the report, volatile organic compounds (VOCs) were not detected in ambient air samples and soil gas samples that were collected outside of the debris placement boundary or the waste footprint. VOCs were not detected in surface soil gas samples that were collected within the waste unit soil cover, but both methane and

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carbon monoxide were detected. VOCs were detected in soil gas samples that were collected within, or associated with, the debris itself. The CERCLA cancer risk was calculated for residential and industrial receptors to be within the 10^{-5} and 10^{-6} range; i.e. it is within the acceptable management range. The non-cancer results did not exceed 1.

Three remedial alternatives for the AA3 site were evaluated: 1) no action, which is required to be evaluated under CERCLA; 2) limited grading of the site; and 3) installation of a landfill cap. Four versions of landfill cap designs were included in this evaluation.

We have the following comments: The Navy has not provided sufficient basis for its conclusion that the waste at Site AA3, which is currently in contact with groundwater or within 5 feet of groundwater, has not historically impacted, and is not currently impacting, groundwater quality at the site. Moreover, CCR Title 27, Section 20240 (c), specifically requires a minimum of 5 feet of separation between the base of the waste and the highest anticipated elevation of groundwater.

- **11.3 ARARs Evaluation**, Page 11-3: The Navy has identified the State's hazardous waste landfill regulations (CCR Title 22) as the ARARs (applicable, relevant and appropriate requirements) for this landfill site. Unit AA3 was used for disposal of general industrial waste and MSW, with a minor component of unknown and possibly hazardous waste. Several other disposal units that were previously investigated at the Base were used in a similar fashion. As you are aware, we have consistently objected to the citing of hazardous waste landfill regulations as ARARs for the MSW landfill sites at the former MCAS El Toro.

We acknowledge that, in some respects, the State's hazardous waste landfill requirements (CCR Title 22) are more stringent than the requirements for MSW landfill sites, because the threat to human health and the environment is typically greater at a hazardous waste landfill than an MSW landfill. However, your CERCLA risk assessment demonstrates that the hazardous risk associated with the AA3 landfill is not above the risk management range, and does not necessarily require any remedial action for the protection of human health. More appropriately, you must recognize that this landfill is an MSW landfill, and you have already determined that the waste is either in contact with groundwater, or is within 5 feet of historical high groundwater levels.

In summary, MSW was placed in landfill unit AA3 after 1988. Therefore, the State and federal solid waste landfill regulations, CCR Title 27 and 40 CFR Part 258, are the applicable regulations for this site, outside of CERCLA requirements. Any closure or remedial action undertaken for this site must conform to and comply with the State and federal solid waste landfill requirements. **Be advised that, should**

Ms. Debra Theroux

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August 1, 2008

you omit CCR Title 27 and 40 CFR Part 258 as ARARs for landfill site AA3, you will be required to proceed with landfill remediation and closure for the protection of water quality under these same regulations, after you have completed the CERCLA response action.

For any questions, please call me at (951) 782-4494, or send email to jbroderick@waterboards.ca.gov.

Sincerely,


John Broderick
Site Cleanup/DoD Section

Enclosures:

1. RWQCB letter dated January 26, 2004
2. RWQCB letter dated July 26, 2004
3. RWQCB letter dated February 16, 2006
4. RWQCB letter dated September 17, 2007

cc via electronic copy (with enclosures):

Richard Muza, U.S. EPA, Region 9 – Muza.Richard@epa.gov

Quang Than, DTSC, Office of Military Facilities - qthan@dtsc.ca.gov

James Callian, BRAC PMO West – james.callian.ctr@navy.mil

California Environmental Protection Agency



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Arnold Schwarzenegger
Governor

January 26, 2004

Base Realignment and Closure
Attn: Mr. F. Andrew Piszkin, P.E.
BRAC Environmental Coordinator
7040 Trabuco Road
Irvine, California 92618

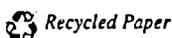
COMMENTS ON DRAFT EXPANDED SITE INSPECTION REPORT, ANOMALY AREA 3, FORMER MARINE CORPS AIR STATION, EL TORO

Dear Mr. Piszkin:

We have reviewed the above referenced document, dated November 2003, which we received on November 10, 2003. We have the following comments:

- **Section 2.2: LAND USE**, Page 2-5: This section identifies borrow pits and trenches that were used as disposal sites for construction debris from 1972 to 1988. The disposal areas are now covered with a soil layer that is up to five feet thick. The California Code of Regulations, Title 27, Section 20164 (27 CCR 20164) defines construction and demolition wastes as "the waste building materials, packaging and rubble resulting from construction, remodeling, repair and demolition operations on pavements, houses, commercial buildings and other structures." In addition, as described in detail below, the results of your investigation demonstrate that the demolition waste that was placed in Anomaly Area 3 does not meet the criteria for the 27 CCR definition as inert material. The disposal pits and trenches are, therefore, a non-hazardous solid waste landfill site.
- **Table 3-1: Summary of Detected Analytes Exceeding MCLs – Groundwater Sampling – Previous**, Page 3-2: There is sufficient sampling to document a release from one or more of the landfill units that comprise Anomaly Area 3. We do not believe that those releases have been fully characterized. The scope of this investigation is not compatible with the methodology required under 27 CCR 20425 for determining contaminant releases to groundwater from a non-hazardous solid waste landfill. While we recognize that the Navy may not consider these releases to be significant under CERCLA definitions, the degradation of water quality is a violation of the Porter-Cologne Water Quality Control Act and the Water Quality Control Plan for the Santa Ana Region, and must be dealt with in accordance with procedures set forth in 27 CCR for contaminant releases from landfills.

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- **Section: 3.4 GEOPHYSICAL INVESTIGATION, Page 3-5:** This section describes the results of geophysical characterization of the waste, which indicates the presence of varying amounts of both buried debris and metal debris. Unless further testing reveals the presence of hazardous wastes, this material is likely non-hazardous solid waste per 27 CCR 20220.
- **Table 3-3: Details of Subsurface Soil Sampling from Trenches – Previous Investigation, Page 3-7:** Under the *Material Found* heading, all of the identified debris appears to be non-hazardous solid waste per 27 CCR 20220.
- **Section 6.1: PHYSICAL EXTENT OF DEBRIS PLACEMENT AREA, Page 6-2:** The third paragraph states that domestic refuse is not present, and that the refuse encountered would be classified as inert waste per State law definition. Contrary to this statement, Table 3.3 for Trench Number H4 identifies domestic refuse as "found." Shallow and deep soil gas sampling has been conducted at perimeter and interior locations at this landfill site. Methane and other volatile organic compounds have been detected in soil gas samples and in air samples that were collected above the landfill surface. Groundwater monitoring results indicate that a contaminant release has occurred at this landfill site.

Please note that, by definition, inert waste is material that will not decompose. The presence of landfill gas and groundwater contamination demonstrates that the material placed in the landfill is not inert waste, and has adversely impacted water quality.

- **Section 6.5.5: Summary of Groundwater Sampling Results, Page 6-72:** The statistical data that you presented are based on analytical results for four groundwater samples that were collected over four years, at various times of the year. The use of these results for standard statistical analyses of water quality data is not appropriate. Acceptable data collection criteria and statistical analytical methods for water quality evaluation are described in 27CCR 20415(e)(6) et seq. Specific programs for these analyses are available from various technical sources. If you are unable to locate the necessary information for appropriate statistical analysis, our staff would be happy to assist you by providing the names of several acceptable statistical methods for analysis of groundwater quality data. Please be aware that additional data will be required for any such method, as four individual data points from four separate years will not enable you to run a meaningful statistical analysis of groundwater quality.
- **Section 6.5.5: Summary of Groundwater Sampling Results, Page 6-72:** This groundwater investigation focused on CERCLA-listed contaminants. Low detections of volatile organic compounds, semi-volatile organic compounds, petroleum hydrocarbons, and metals were identified in groundwater at this landfill site, indicating that a release to groundwater has occurred. Pursuant to 27 CCR 20425, the landfill must enter into an evaluation monitoring program to provide full characterization of the nature and extent of this release.
- **Section 6.5.5: Summary of Groundwater Sampling Results, Page 6-72 and Section 9.6: Evaluation of Groundwater Quality, Page 9-2:** Based on the data you provided, it is evident that the landfill waste at this site is situated within, or in close proximity to, the

January 26, 2004

groundwater. According to 27 CCR 20240(c), "Existing landfills shall be operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water."

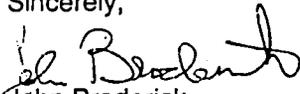
- **Section 6.5.5: Summary of Groundwater Sampling Results, Page 6-72 and Section 9.6: Evaluation of Groundwater Quality, Page 9-2:** As indicated in our comments above, we believe that your investigations have documented the occurrence of contaminant releases from this landfill site; therefore, we cannot concur with your assertion that the groundwater has not been impacted. This release will need further assessment consistent with the procedures outlined in 27 CCR.
- **Section 9.8: Evaluation of Surface Water Quality, Page 9-3:** Water quality impacts resulting from the release of contaminants at concentrations above their respective regulatory thresholds are identified in your report. Evaluation and corrective action to address the identified contaminant release is appropriate.

Prior to this report submittal, the proposal for this site called for consolidation of the waste at Installation Restoration Program Site 3. This document recommends no further action at this landfill; however, based on the concerns listed above, we believe Anomaly Area 3 is not an inert solid waste landfill site. Further, this landfill apparently has released contaminants to both groundwater and surface waters. These releases will require assessment and corrective action in accordance with the procedures set for non-hazardous solid waste landfills, pursuant to 27 CCR. Therefore, we cannot concur with a no further action determination for this site.

Please submit a proposed evaluation monitoring plan for this landfill site by February 24, 2004 for our review and approval.

For any questions, contact me at (909) 782-4494, or you may call Ann Sturdivant, Chief of our SLIC/DoD Section, at (909) 782-4904, or Dixie Lass, Chief of our Land Disposal Section, at (909) 782-3295.

Sincerely,



John Broderick
SLIC/DOD Section

cc: Mr. Jorge Leon, OCC, SWRCB
Ms. Nicole Moutoux, US EPA, Region 9
Mr. Manny Alonzo, DTSC, Office of Military Facilities
Mr. Karnig Ohannessian, NAVFACENGCOM, Southwest Division

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Arnold Schwarzenegger
Governor

July 26, 2004

Base Realignment and Closure
Attn: Mr. F. Andrew Piszkin, P.E.
BRAC Environmental Coordinator
7040 Trabuco Road
Irvine, CA 92618

COMMENTS ON NAVY RESPONSE TO COMMENTS: EXPANDED SITE INSPECTION, ANOMALY AREA 3, FORMER MARINE CORPS AIR STATION, EL TORO

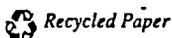
Dear Mr. Piszkin:

We have reviewed the above referenced document, dated June 28, 2004, which we received on June 30, 2004. We have the following comments:

Our comment letter of January 26, 2004 regarding Anomaly Area 3 focused on the fact that this site is a non-hazardous solid waste landfill. For the most part, you agree with our statements. Your conclusion is to address this site utilizing the Navy's authority under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Defense Environmental Restoration Program under the Federal Facility Agreement (FFA) for El Toro NWS. As we have previously stated, this site is not a CERCLA release site, and the site inspection did not identify CERCLA wastes. Your proposal to investigate and manage the environmental issues at the site under CERCLA instead of CCR Title 27 is not appropriate. Further, such an approach would increase the cost and time required for your investigation. CERCLA requires human and ecological risk assessment and risk based decision-making protocols, which can be very expensive and time-consuming to complete. In the end, the applicable, relevant, and appropriate requirements (ARARs) for this site will be the State and federal solid waste landfill regulations. These regulations will ultimately determine whether remedial action is or is not required for this site, in accordance with the CERCLA process. Therefore, there is no cost savings or benefit to the Navy in opposing the implementation of the appropriate State and federal regulations.

We strongly disagree with your recommendations to include this site into the FFA for El Toro NWS, and to incorporate it into CERCLA program. As a signatory agency to the FFA, we do not concur with inclusion of this site into your CERCLA program. This is a compliance site, under CCR Title 27, as stated in our January 26, 2004 letter.

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July 26, 2004

You should note that you failed to provide the evaluation monitoring plan for characterization of contaminant releases to groundwater at for Anomaly Area 3, as requested in our January 26 2004 letter. Please submit the evaluation monitoring plan, and proceed with appropriate action in accordance with CCR Title 27.

For any questions, please call me at (951) 782-4494, or send email to jbroderic@rb8.swrcb.ca.gov.

Sincerely,


John Broderick
SLIC/DoD Section

cc via e-mail: Mr. Jorge Leon, OCC SWRCB
Mr. Gino Yekto, CIWMB
Ms. Nicole Moutoux, US EPA, Region 9
Mr. Tayseer Mahmoud, DTSC, Office of Military Facilities
Mr. Karnig Ohannessian, NAVFACENGCOM, Southwest Division



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Lloyd, Ph.D.
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Arnold Schwarzenegger
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February 16, 2006

Base Realignment and Closure
Attn: Mr. Darren Newton
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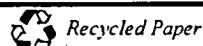
COMMENTS ON DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT, OPERABLE UNIT 2C – ANOMALY AREA 3, FORMER MARINE CORPS AIR STATION, EL TORO, SWRCB GEOTRACKER ID: DOD100131500

Dear Mr. Newton:

We have reviewed the above referenced document, dated December 2005, which we received on December 6, 2005. We have the following comments:

- **3.7 EVALUATION OF RADIONUCLIDES, 3.7.1 Groundwater**, Page 3-15 and –16: The section states that a least one or more groundwater samples test above drinking water standards, likely the maximum contaminant level (MCL) for that radionuclide concentrations. It is further stated the accident is naturally occurring. Backup information to evaluate the information and decision for no further evaluation is not supported in an appendix to the report, as it should be. Please attach sufficient supporting information for the statement that no further evaluation of radionuclide concentrations in groundwater was required.
- **6.5 GROUNDWATER**, Page 6-75: Groundwater was sampled only for contaminants of concern. General minerals were not sampled regularly for total assessment of the impact of the waste management unit on the underlying groundwater and downgradient beneficial uses. Since the site is a typical compliance site, a solid waste landfill, regularly sampling of general mineral parameters should have occurred in addition to sampling contaminants of concern.
- **6.7 SURFACE WATER SAMPLING**, Page 6-113: Surface water was sampled only for contaminants of concern, also. General minerals and or applicable parameters of concern for assessing the waste management units impact on the downgradient or down stream beneficial uses and total maximum daily loads (TMDLs) were not sampled. This sampling should have occurred. The limited surface water sampling completed implies the general area is impacting downgradient surface water quality. The sampling completed was insufficient to demonstrate the waste management unit is not impacting down stream water quality.
- **ARARs EVALUATION**: We continue to disagree with your selection of State hazardous waste regulations for items such as groundwater monitoring and water quality protection standard over State solid waste regulations. This waste management unit is a solid waste

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landfill, not a hazardous waste landfill. Yes, the State regulations for hazardous waste landfills are in several instances more stringent than those for solid waste landfills. But, the State applies the regulations that are applicable for the type of waste disposed of in the unit. We do not concur that you have properly identified all the ARARs for a solid waste landfill regulated under Title 27 of the California Code of Regulations.

- **13.3.2 COMPLIANCE WITH ARARs**, (13.3.2) Page 13-32: The groundwater investigation demonstrates that the landfill has and is currently impacting the underlying groundwater quality. The investigation also documents that waste is now or has been in groundwater or is located with five feet of the underlying groundwater. All existing solid waste landfill units are required by Title 27 of the California Code of Regulation, Section 20240 (c) to have the base of the waste separated by a minimum of five feet above the highest anticipated elevation of underlying groundwater. All of the alternatives evaluated in the feasibility study portion of the report do not identify this regulatory requirement and do not propose as part of the remedy actions to comply with the five-foot separation requirement. Therefore, we do not concur with all remedial alternative except Alternative 1 complies with our applicable, relevant, and appropriate requirements. In our opinion, none of the remedial alternatives fully complies with our ARARs.
- **Appendix H – ARAR Evaluation, 2.2.1.2 STATE, Comprehensive Water Quality Control Plan for the Santa Ana River Basin (Basin Plan)**, Page H2-4: We do not concur with the statement that no remedial action is require at Anomaly Area 3 Site for surface water impacts. We do not believe the site's potential to impact surface water was completely and properly assessed.

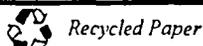
It should be noted, we have stated in our letters of January 26, 2004 and July 26, 2004 our disagreement with the determination that, Anomaly Area 3 is a CERCLA release site. We consider the site a compliance site, a solid waste landfill unit. Furthermore, we will not agree to inclusion under the Federal Facility Agreement of this site. We will not stand in the way of any site environmental benefit or improvements which result from CERCLA remedial actions. We will, however, at the end of the CERCLA process hold the property owner responsible for compliance with our regulatory mandates for a solid waste landfill unit. For any questions, please call me at (951) 782-4494, or send email to jbroderick@waterboards.ca.gov.

Sincerely,


John Broderick
SLIC/DoD Section

cc via email: Mr. Richard Muza, US EPA, Region 9
Mr. Frank Cheng, DTSC, Office of Military Facilities
Mr. James Callian, NAVFACENGCOM, Southwest Division

California Environmental Protection Agency





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Santa Ana Region



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Secretary for
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September 17, 2007

Base Realignment and Closure
Attn: Mr. Richard C. Weissenborn, P.E.
BRAC Environmental Coordinator
7040 Trabuco Road
Irvine, California 92618

**Comments on Draft Technical Memorandum, Anomaly Area 3, Supplemental
Groundwater Monitoring
Former Marine Corps Air Station, El Toro
Geotracker No. DOD100131500**

Dear Mr. Weissenborn:

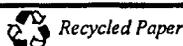
We have reviewed the above referenced document, dated July 2007, which we received on July 25, 2007. This report includes:

- Monitoring well network, monitoring procedures, and quality control
- Groundwater monitoring results of round 9
- Statistical evaluation
- Conclusions and recommendations

We have the following comments:

Recommendations, Page 11: The memorandum recommends that no additional response action be incorporated into the remedial investigation/feasibility study for groundwater based on CERCLA [Comprehensive Environmental Response, Compensation, and Liability Act (of 1980)]. Although we do not completely agree with the conclusions, we agree that CERCLA response action may not be applicable for this site. However, for the solid waste management unit (landfill), Title 27 requirements are applicable. We request that you initiate detection monitoring for this landfill in accordance with Title 27, California Code of Regulations, Sections 20380 and 20385.

California Environmental Protection Agency



Encl 4

Mr. Richard C. Weissenborn, P.E.

- 2 -

September 17, 2007

For any questions, please call me at (951) 782-4494, or send email to jbroderick@waterboards.ca.gov.

Sincerely,



John Broderick
Site Cleanup Program/DoD Section

cc via email only: Richard Muza, U.S. EPA, Region 9
Quang Than, DTSC, Office of Military Facilities
James Callian, BRAC PMO WEST

California Environmental Protection Agency

