# California Regional Water Quality Control Board

JCB/AES A

## Santa Ana Region

Winston H. Hickox
*Secretary for Environmental Protection*

Internet Address: http://www.swrcb.ca.gov/rwqcb8
3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (909) 782-4130 - FAX (909) 781-6288

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June 12, 2003

Mr. Philip H. Mook, Jr., P.E.
March Environmental Coordinator
AFRPA/DD
3411 Olson Street
McClellan, California 95652-1003

**REQUEST FOR A TECHNICAL REPORT ON EMERGENT CHEMICALS SOURCES AND SAMPLING, FORMER MARCH AIR FORCE BASE**

Dear Mr. Mook:

The California Regional Water Quality Control Board ("Regional Board") is the public agency with primary responsibility to protect groundwater and surface water quality within this Region. This Regional Board requests your assistance in identifying potential sources of emergent chemicals {perchlorate, n-nitrosodimethylamine (NDMA), 1,4-dioxane, 1,2,3-trichloropropane, chromium VI, and polybrominated diphenyl ether (PBDE)}, in soil, groundwater or surface water. Our priority in this regard is assessing the groundwater quality associated with former and active military facilities for the presence of emergent chemicals of concern. We are requesting you submit a Source Evaluation Report, identifying sources of emergent chemicals at all areas of concern (AOC), installation restoration (IR) and operable unit (OU) sites within the facility.

**SUMMARY**

The detection of emergent chemicals in groundwater, above State and Federal maximum contaminant levels (MCLs) or action levels (ALs) has recently caused this Regional Board to reassess the threat posed to groundwater resources used for domestic and municipal supply. Furthermore, many drinking water supply wells have been shut down throughout California due to pollution from one or more of these emergent chemicals. These recent developments have raised concerns about losing beneficial uses of groundwater due to the presence of these chemicals in soil, surface water, or groundwater. Enclosed is a California Environmental Protection Agency (CalEPA) letter expressing these concerns, and a request for cooperation on addressing these concerns.

The presence of these emergent chemicals can increase the costs of effective remediation and has caused the reassessing of cleanup remedies. All of these emergent chemicals have acute to chronic health effects in humans even though some have been found at very low concentrations, i.e. nanograms/Liter (parts per trillion (ppt)). In addition, some of these chemicals are suspected carcinogens. The enclosure to this letter provides additional emergent chemical information.

Based upon our knowledge of military facilities, we believe that sources for emergent chemicals potentially exist at former or active military facilities, which can date back to the early 1940's. Facilities that have taken a proactive approach and already evaluated source areas, and collected data on the emergent chemicals, should respond to the following request by verifying the agencies have the information.

**DIRECTIVES**

We are requesting your assistance in identifying sources of emergent chemicals at all AOC, IR and OU sites within the facility for Department of Toxic Substances Control (DTSC) and Regional Board review, regardless of which agency is lead for the facility. The intent in requesting the multiple emergent chemicals is to streamline regulatory review by not sending individual requests. These AOC, IR, and OU, sites should include, but are not limited to:

**Potential Source Areas for Emergent Chemicals Associated with Explosives**

- Ordnance detonation/disposal sites,
- Missile/rocket test sites and launch pads,
- Catch basins, waste sumps, clarifiers, and settling ponds,
- Decommissioned missile silos,
- Suspected areas where chemicals and pesticides were stored, used, transferred, processed, incinerated, or disposed,
- Firing and bombing ranges, and
- Mock battle-training locations.

**Potential Source Areas for Emergent Chemicals Associated with Solvent Release Sites**

- Catch basins, waste sumps, clarifiers, and settling ponds,
- Paint maintenance, hobby shops, plating shops, and degreasing activities,
- Weapons maintenance or cleaning areas,

- Known release sites, as appropriate, and
- Suspected areas where these chemicals and pesticides were stored, used, transferred, processed, incinerated, or disposed.

In order to assist us in identifying potential sources of emergent chemicals we are asking that a Source Evaluation Report be prepared. Please prepare and submit a Source Evaluation Report for Regional Board and/or DTSC review, by September 30, 2003 Department of Toxic Substances Control. At a minimum, the source evaluation report should include the following:

1. Property ownership and land use history from original land grant,
2. Locations where emergent chemicals were used and stored on-site,
3. Location and time specific quantities of emergent chemicals used, if available,
4. Handling and storage procedures for the use of emergent chemicals and emergent chemical wastes used and/or generated on site,
5. Emergent chemical data from soil, surface water, and groundwater already collected, and
6. Schedule for when environmental samples will be collected at sites with no existing soil, surface water and groundwater data on emergent chemicals.

Facilities completing the evaluation of sources for the emergent chemicals finding no potential sources should also report the results of the evaluation.

Due to the prevalence of these chemicals in groundwater, all sites with groundwater pump and treat systems should sample the influent to the systems, regardless of whether an identified potential source exists.

Following review of the source evaluation report there will be a determination made by Board and/or DTSC staff if a proposal for collecting emergent chemical data for soil, surface water and groundwater is necessary. If it is determined that a sampling proposal is required, the sampling proposal should include the following:

1. Locations, numbers, and identity of proposed wells, surface water locations, and treatment systems to be sampled,
2. The rationale for sampling these selected wells,
3. Proposed soil sampling locations and rationale,
4. A brief description of the methodology proposed to be used to collect the soil and/or water samples, and
5. A schedule for sampling these soils, surface waters and wells.

Samples should be collected as described in a Board and/or DTSC approved

sampling proposal. Ideally, at those sites with potential sources, selected groundwater monitoring wells and surface water locations should be sampled during the next scheduled monitoring event for the emergent chemicals and the results transmitted to the agencies in the next groundwater monitoring report for the facility.

**TESTING REQUIREMENTS**

Listed below are the emergent chemicals of concern and our recommendations with respect to acceptable testing procedures for each of the specified emergent chemicals:

| Emergent Chemical | Acceptable Test Method | Reporting Limit |
|---|---|---|
| Perchlorate | USEPA Method 314.0 | 4 µg/L |
| N-Nitrosodimethylamine (NDMA) | USEPA Method 1625 | 0.002 µg/L |
| 1,4-Dioxane | USEPA Method 8270 | 2 µg/L |
| 1,2,3-Trichloropropane | USEPA Method 524.2 | 0.005 µg/L |
| Total/Hexavalent Chromium | USEPA Method 200.8/218.6 | 1 µg/L/0.3 µg/L |
| Polybrominated Diphenyl Ether | USEPA Method 8270 | 2 µg/L |

1 These test methods may require modification, e.g. selected ion monitoring, to achieve the recommended reporting limits.

The use of these analytical testing procedures by a California Certified Laboratory will provide consistency in the analysis of environmental samples and high quality data necessary to make appropriate regulatory decisions.

If you have any questions, please contact John Broderick, Remedial Project Manager at (909)-782 4494 or Ann Sturdivant, Program Manager at (909) 782 4904.

Sincerely,

Gerard J. Thibeault
Executive Officer

Enclosures:
1. CalEPA Letter Dated June 6, 2003
2. Emergent Chemical Information

cc w/enclosures:
Mr. Stephen Niou, RPM, Department of Toxic Substances, OMF

Ms. Sheryl Lauth, RPM, USEPA, Region XI

cc w/o enclosures:
Mr. Jorge Leon, Regional Board Counsel
Mr. John Scandura, Department of Toxic Substances Control, Office of Military Facilities

JB:/dod/MRPA-report request