CMG ENVIRONMENTAL, INC.

December 3, 2003

Mr. Edwin P. Madera
Raytheon Integrated Defense Systems
528 Boston Post Road
Mail Stop 1880
Sudbury, MA 01776

Re: Public Commentary on November 12, 2003 Draft
Phase I Initial Site Investigation (ISI) for RTN 3-22408
Former Raytheon Facility, 430 Boston Post Road, Wayland MA
CMG ID 2002-003

Dear Mr. Madera:

The following are my comments on the November 12, 2003 Draft ISI report for the former Raytheon facility in Wayland, Massachusetts (the Site) regarding RTN 3-22408 prepared by Environmental Resources Management (ERM). For the record, the Wayland Board of Selectmen has retained me to provide technical review of document submittals and other activities at the Site on behalf of the Town of Wayland.

As in past document reviews, I have prefaced my comments according to ERM's heading designations for ease of comparison, and used uppercase roman numerals to identify each comment.

OVERALL

It is readily apparent from review of the ISI Report that there are three very different releases addressed under the single RTN of 3-22408. The 'Southern Area' is a methyl tertiary butyl ether (MTBE) release, which appears to be the direct result of gasoline release at an abutting property. The 'Western Area' is due to arsenic detected in wetlands groundwater, which appears to be a naturally-occurring phenomenon. The 'Northern Area' is a chlorinated solvent release whose origins are uncertain (but appears to have occurred during Raytheon's tenancy), which has migrated a significant distance in both the horizontal and vertical directions.

I) The Town of Wayland is concerned that keeping these three obviously separate releases grouped under the same RTN will multiply the amount of reporting required by the Massachusetts Department of Environmental Protection (DEP) under the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000), and subsequently for Wayland to review. The Town believes that the Southern Area will be best addressed through assertion of Downgradient Property Status pursuant to CMR 40.0180, and the Western Area will likely be addressed as a background condition that has already achieved a Class B-1 Response Action Outcome (RAO). Meanwhile, it appears that the Northern Area will require a very significant investigation that will take at least two more years to proceed through MCP Phase II and III before Raytheon can determine a viable remediation strategy. Wayland recommends that Raytheon separate the three areas under

600 CHARLTON STREET, SOUTHBRIDGE MA 01550
PHONE (508) 765-8510
FAX (508) 765-8515

separate RTNs, if DEP will accommodate this. It may be possible to submit a Partial RAO Statement to address the Western Area, but we are not aware of any similar mechanism to obtain "Partial Downgradient Property Status."

2.0 GENERAL DISPOSAL SITE INFORMATION

2.4 Estimated Number of On-Site Workers at the Disposal Site

II) ERM is correct in stating "there are currently a total of fewer than 60 workers at the property." However, this appears to be a temporary population low. During the mid-1950s through the mid-1990s, Raytheon employed more than 1,000 people at the property (and possibly as many as 1,800 to 2,000). This is pertinent to the Numerical Ranking Scoresheet used for Tier Classification purposes (Appendix H of the ISI Report; see also our comment **XI** below). The Town recommends that you include wording briefly explaining the change in number of property workers over the past 10 years, and provide an estimated maximum number of workers potentially employed at the property building at full occupancy.

2.8 Natural Resource Areas Located within 500 feet of the Disposal Site

III) The second paragraph on page 8 of the ISI Report reads "The southeastern boundary of the GMNWR, which abuts the northwestern boundary of the Northern Area, is a federally protected open space." The boundary of the Great Meadows National Wildlife Refuge (GMNWR) is a line, not a space. Wayland believes what ERM meant to say is that 'the GMNWR, whose southeastern boundary abuts the northwestern boundary of the Northern Area, is a federally-protected open space.'

3.0 DISPOSAL SITE HISTORY

3.1 Owner/Operator and Operations History

3.1.2 Current and Historical Site Uses

IV) ERM states that "No additional information was identified regarding property use prior to 1936." On behalf of Wayland, CMG suggests that ERM research "Historic USGS Maps of New England & New York" available online from the University of New Hampshire Dimond Library Government Documents Department (http://docs.unh.edu/nhtopos/nhtopos.htm). We quickly located images of an 1894 topographic map of Framingham that depicts the Site (http://docs.unh.edu/MA/fram94ne.jpg), a portion of which is included in Figure 1 attached to this letter. This map clearly depicts the entire property as flood plain wetlands along the Sudbury River, which we believe is significant in regards to hydrogeology of the disposal site. The 1943 topographic map of Natick from this collection (see http://docs.unh.edu/MA/natc43nw.jpg) depicts a pronounced hill within the property boundaries. The Town requests that ERM review information from this data source and incorporate pertinent information into the ISI Report.

V) ERM states on page 12 of the ISI Report that "Detailed discussions of historical operations at the Former Raytheon Facility are presented in the Phase I and Phase II reports for RTN 3-13302 and Tier IB Permit No. 133939" (prepared in 1996). This is certainly true. However, the Town suggests that it may be beneficial to provide sufficient information in this portion of this ISI (for RTN 3-22408) to make for a stand-alone document.

The issue of the current Report not being a stand-alone document arises repeatedly:

- Section 3.3.1 (page 13) the current ISI Report refers to Section 4.3.1 and Table 1 of the 1996 Phase I (historical Raytheon OHM use/storage);

- Section 3.3.2 (also page 13) refers to Section 4.3.2 and Table 1 of the 1996 Phase I (underground storage tanks);
- Section 3.3.3 (still page 13) refers to Section 4.3.3 of the 1996 Phase I (aboveground storage tanks);
- Section 3.4.2 (page 15) refers generically to the 1996 Phase I (drywells & leachfields);
- Section 3.4.3 (also page 15) refers to several previous reports from 1996, 2001, and 2002;
- Section 3.4.5 (page 16) refers generically to the 1996 Phase I (off-site hazardous waste disposal);
- Section 3.5.2 (page 17) refers generically to the 1996 Phase I (OHM storage permits);
- Section 3.5.3 (also page 17) refers generically to the 1996 Phase I (wastewater discharge permits);
- Section 3.5.5 (still page 17) refers generically to the 1996 Phase I (air quality discharge permits);
- Section 3.5.7 (page 18) refers generically to the 1996 Phase I (historical RCRA permits);
- Section 3.5.8 (also page 18) refers generically to the 1996 Phase I (historical wastewater discharge permits); and
- Section 4.1 (page 20) refers to the 2002 Phase IV report for RTN 3-13302 (field methodology and investigation results).

There may be other such references that we did not highlight.

Wayland recommends that ERM either include all the above information directly into the current ISI Report or include select portions of the previous (1996) Phase I report as an appendix. We also request that ERM provide specific section number references to any previous reports cited rather than generically stating "as presented in the Phase I Report for RTN 3-13302."

3.4 Waste Management History

3.4.1 Land Disposal

VI) On page 14 of the ISI Report, ERM notes that "portions of the wetlands in the Western Area had been filled" between 1936 and 1957. The Town notes that it appears the entire property was apparently wetlands in 1894, so a good deal more than just the Western Area has been filled (see Comment **IV** and our attached Figure 1). Although not a requirement for ISI reporting, it may prove useful to establish a chronology of property filling.

5.0 RESULTS

5.4 Nature and Extent of Contamination

5.4.1 Evidence of Release

Groundwater – Western Area

VII) On page 32 of the ISI Report, ERM discusses relationships between arsenic concentrations in groundwater, pH, and oxidation-reduction potential (ORP). This discussion refers to Figure 16. ERM states that "concentrations of arsenic above RCs were most frequently detected in groundwater samples having relatively low ORPs (i.e., less than 0.00 millivolts (mV))." While this may be true, it implies a correlation between negative ORP and elevated arsenic concentrations.

We have done a statistical analysis on groundwater arsenic results presented in Table 11 of the ISI report versus ORP and pH field screening values presented in Tables 6C and 6B, respectively. (The field parameter measurements for September 2002 groundwater sampling are not given in the current ISI report – we obtained these values from Tables 3a [pH] and 3e [ORP] presented in the December 30, 2002 Phase IV report for RTN 3-22408.) Our analysis of 26 data points indicates an R^2 correlation coefficient of 0.0239 for arsenic concentrations versus ORP, and an R^2 value of 0.0054 for arsenic concentrations versus pH (see attached Figure 2). This indicates there is no statistical correlation between ORP and arsenic concentrations or pH and arsenic concentrations.

Wayland requests that ERM consider other possibilities to explain the observed elevated arsenic concentrations in Western Area groundwater at the Site. While their conceptual model of iron hydroxide-mediated release of arsenic oxyanions under reducing conditions seems plausible (see also Section 5.4.5 [Western Area, page 37] of the current ISI Report), our statistical analysis suggests this may not be the actual mechanism involved.

5.4 Conceptual Site Models

Northern Area

VIII) The Town requests that ERM postulate an approximate volume of trichloroethene released. We believe that if you can approximate the release volume, this will aid in narrowing down the possibilities of release mechanism.

6.0 CONCEPTUAL SCOPE OF WORK

IX) On page 41 of the ISI Report, ERM notes that they previously submitted a Final Scope of Work to DEP. This is true. However, to avoid any confusion the Town suggests that ERM and Raytheon point out this was a Phase I Scope of Work, not a Phase II Scope of Work as set forth at 310 CMR 40.0834 of the Massachusetts Contingency Plan (MCP).

7.0 TIER CLASSIFICATION

7.1 NRS Scoresheet

ERM numerically scored RTN 3-22408 as 516, which results in a Tier IB classification (see page 43 and Appendix H of the ISI report).

X) In Section II.B. of the NRS Scoresheet, ERM has scored groundwater 20 points for 'evidence of contamination' and 100 points for 'potential exposure pathway.' It is our understanding that the higher of these scores carries forward in the NRS scoresheet, not both values. Therefore we believe the total Section II score should be 150, not 170.

XI) Section VI.A. of the NRS Scoresheet indicates the number of on-Site workers as "none," which scores 0 points. Wayland agrees that there are no workers employed at the actual 'Disposal Site' as defined in Section 1.1 of the ISI Report and illustrated on Figure 2. However, 310 CMR 40.1507(1)(a)3. clearly discusses the "presence of On-Site Workers at the property or properties comprising the disposal site." Therefore, the Town believes that ERM must consider that there is a large commercial building and small municipal wastewater treatment plant located on the 'properties which comprise the disposal site.' ERM states in Section 2.4 of the ISI Report that there are currently 'fewer than 60' workers at the property. If this remains the case for the foreseeable future, then a score of 5 points (for 1-99 on-site workers) might be valid. However, Wayland believes it is reasonably foreseeable that 1,500-2,000 employees will work at the property again, as was the case during Raytheon's occupancy of the premises. Therefore, we suggest that ERM score Section VI.A. of the NRS Scoresheet as 15 points (for ≥1,000 on-site workers).

These two changes lower the overall disposal site score to 511, which remains a Tier IB classification.

As always, I thank you in advance for your timely response to this commentary on behalf of the Town of Wayland.

Sincerely,
CMG ENVIRONMENTAL, INC.

Benson R., Gould, LSP, LEP
Principal

Attachment: Figure 1 (1894 Topographic Map)
Figure 2 (Arsenic & Field Parameters)

cc: Environmental Resources Management (John C. Drobinski, P.G., LSP)
Mr. J. Andrew Irwin, Wayland
Ms. Anette Lewis, Wayland
Massachusetts DEP (Pat Donahue, Larry Immerman, Karen Stromberg)
National Parks Service (% Jamie Fosberg)
Mr. Lewis Russell, Wayland
Mr. Harvey and Ms. Linda Segal, Wayland
Ms. Kimberly Tisa, U.S. EPA Region I
Wayland Board of Health PIP Repository (% Steve Calichman, Health Director)
Wayland Board of Selectmen (% Executive Secretary Jeff Ritter)
Wayland Business Center, LLC (% Paula Phillips, Congress Group Ventures)
Wayland Conservation Commission (% Brian Monahan)
Wayland Public Library PIP Repository (% Ann Knight)

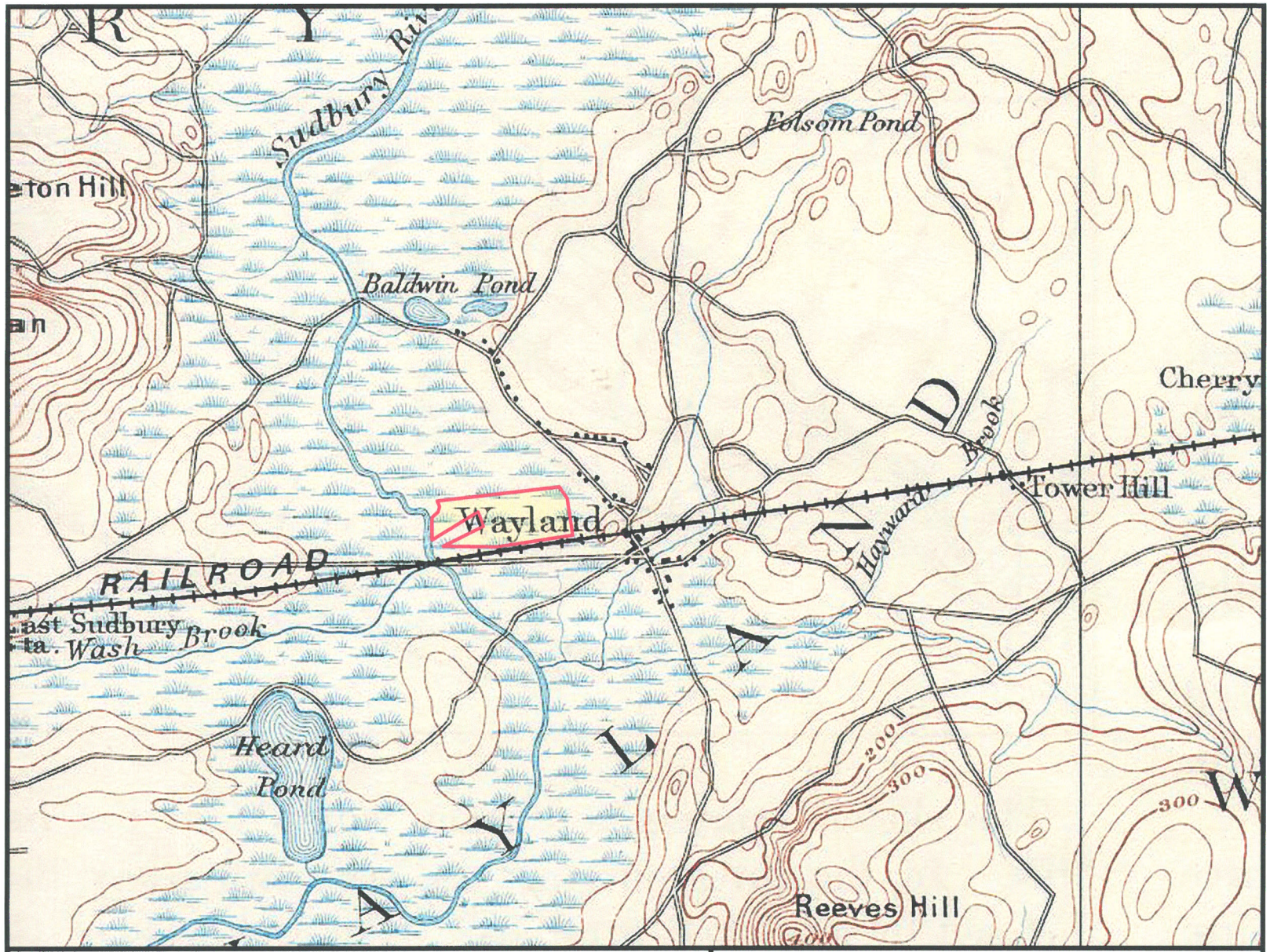

FIGURE 1: 1894 TOPOGRAPHIC MAP
430 BOSTON POST ROAD, WAYLAND MA
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600 CHARLTON STREET
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FIGURE 2: Arsenic & Field Parameters